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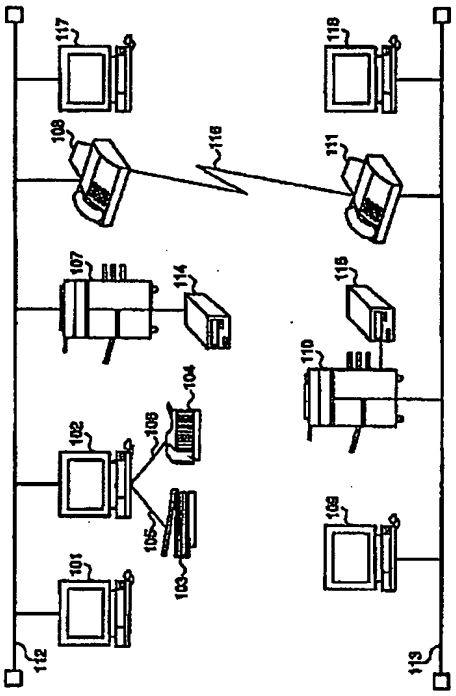
(54) Title of the Invention: Image Processing System and Image Processing System Managing Control Method

(57) [Abstract]

[Subject] To provide an image processing system capable of enhancing convenience relating to usage of an image formation apparatus without damaging control performance for the image formation apparatus.

[Solving Means] A server 117 has storage means such as a hard disc which stores device information as to computers 101 and 102, an image formation apparatus 107 and a facsimile machine 108, which are connected to a LAN 112, and which stores control management information containing user information as to users using these apparatuses. The server 117 controls the foregoing apparatuses connected to the LAN 112 based on the management information. To be concrete, the server 117 sets user permission conditions for the apparatuses with respect to each user, and controls the use of the user of the apparatuses based on the use permission conditions which have been set.



[What is claimed is]

[Claim 1] An image processing system in which devices including an image formation apparatus capable of executing a plurality of processing functions and a communication network management apparatus retaining management information of the devices are connected to a communication network, wherein the communication network management apparatus sets use permission conditions for the usage of the image formation apparatus based on the management information.

[Claim 2] The image processing system according to claim 1, wherein the use permission conditions indicate a usable processing function of the image formation apparatus.

[Claim 3] The image processing system according to claim 1, wherein the use permission conditions indicate a usable period of the image formation apparatus.

[Claim 4] The image processing system according to claim 1, wherein the use permission condition indicates the name of a user who is permitted to use the image formation apparatus.

[Claim 5] The image processing system according to claim 1, wherein the use permission conditions indicate a usable processing function and a usable period of the image formation apparatus and the name of a user who is permitted to use the image formation apparatus.

[Claim 6] An image processing system in which devices including an image formation apparatus capable of executing a plurality of processing functions, the image formation apparatus having display means, and a communication network management apparatus retaining management information of the devices are connected to a communication network, wherein the communication network management apparatus sets use permission conditions for the usage of the image formation apparatus based on the management information, and the image formation apparatus displays the use permission conditions, which have been set, on the display means.

[Claim 7] The image processing system according to claim 6, wherein the user permission condition indicates a usable processing function of the image formation apparatus.

[Claim 8] The image processing system according to claim 6, wherein the use permission

condition indicates a usable period of the image formation apparatus.

[Claim 9] The image processing system according to claim 6, wherein the use permission condition indicates the name of a user who is permitted to use the image formation apparatus.

[Claim 10] The image processing system according to claim 6, wherein the use permission conditions indicate a usable processing function of the image formation apparatus and a usable period thereof and the name of a user who is permitted to use the image formation apparatus.

[Claim 11] An image processing system in which devices including an image formation apparatus capable of executing a plurality of processing functions, the image formation apparatus having manipulation means and display means, and a communication network management apparatus retaining management information of the devices are connected to a communication network, wherein the communication network management apparatus sets use permission conditions for the usage of the image formation apparatus based on the management information, displays the use permission conditions, which have been set, on the display means, and can select contents indicated by the use permission conditions, in accordance with entering manipulations of the manipulation means.

[Claim 12] The image processing system according to claim 11, wherein the use permission conditions indicate a plurality of usable processing functions of the image formation apparatus, and one of the processing functions is selected by the entering manipulation of the manipulation means.

[Claim 13] An image processing system in which a device including at least one image formation apparatus capable of executing a plurality of processing functions, and a communication network management apparatus retaining management information of the device is connected to a communication network, wherein the communication network management apparatus selects a usable image formation apparatus based on the management information, and sets conditions for the use of the selected image formation apparatus.

[Claim 14] The image processing system according to claim 13, wherein the selection of the image formation apparatus by the communication network management apparatus is

performed by information relating to an installation location of the image formation apparatus contained in the management information.

[Claim 15] The image processing system according to claim 13 or 14, wherein the use permission condition indicates a usable processing function of the selected image formation apparatus.

[Claim 16] The image processing system according to claim 13 or 14, wherein the use permission condition indicates a usable period of the selected image formation apparatus.

[Claim 17] The image processing system according to claim 13 or 14, wherein the use permission condition indicates the name of a user who is permitted to use the selected image formation apparatus.

[Claim 18] The image processing system according to claim 13, wherein the selection of the image formation apparatus by the communication network management apparatus is performed by information relating to an installation location of the image formation apparatus contained in the management information, the use permission conditions indicate a usable period of the selected image formation apparatus, and the use period is determined based on the name of a user who is permitted to use the selected information apparatus and the schedule information relating to a use period of the permitted user, which are included in the management information.

[Claim 19] An image processing system management control method used for an image processing system in which devices including an image formation apparatus capable of executing a plurality of processing functions, and a communication network management apparatus retaining management information of the devices are connected to a communication network, the method performing a use management of the image formation apparatus by the communication network management apparatus, wherein the communication network management apparatus sets use permission conditions for the use of the image formation apparatus based on the management information.

[Claim 20] The image processing system management control method according to claim 19, wherein the use permission condition indicates a usable processing function of the image

formation apparatus.

[Claim 21] The image processing system management control method according Claim 19, wherein the use permission condition indicates a usable period of the image formation apparatus.

[Claim 22] The image processing system management control method according to claim 19, wherein the use permission condition indicates the name of a user who is permitted to use the image formation apparatus.

[Claim 23] The image processing system according to claim 19, wherein the use permission conditions indicate a usable processing function, a usable period of the image formation apparatus and the name of a user who is permitted to use the image formation apparatus.

[Claim 24] The image processing system management control method used for an image processing system in which devices including an image formation apparatus capable of executing a plurality of processing functions having display means, and a communication network management apparatus retaining the management information of the devices are connected to a communication network, the method performing the use management of the image formation apparatus by the communication network management apparatus, wherein the communication network management apparatus sets use permission conditions for the use of the image formation apparatus based on the management information, and the use permission conditions set by the image formation apparatus are displayed on the display means.

[Claim 25] The image processing system management control method according to claim 24, wherein the use permission condition indicates a usable processing function of the image formation apparatus.

[Claim 26] The image processing system management control method according to claim 24, wherein the use permission condition indicates a usable period of the image formation apparatus.

[Claim 27] The image processing system management control method according to claim 24, wherein the use permission condition indicates the name of a user who is permitted to use the

image formation apparatus.

[Claim 28] The image processing system management control method according to claim 24, wherein the use permission conditions indicate a usable processing function of the image formation apparatus and a usable period thereof and the name of a user who is permitted to use the image formation apparatus.

[Claim 29] An image processing system management control method used for an image processing system in which devices including an image formation apparatus capable of executing a plurality of processing functions having manipulation means and display means, and a communication network management apparatus retaining the management information of the devices are connected to a communication network, the method performing the use management of the image formation apparatus by the communication network management apparatus, wherein the communication network management apparatus sets use permission conditions for the use of the image formation apparatus based on the management information, the use permission conditions set by the image formation apparatus are displayed on the display means, and condition contents indicated by the use permission conditions are made to be selectable in accordance with the entering manipulation of the manipulation means.

[Claim 30] The image processing system management control method according to claim 29, wherein the use permission conditions indicate a plurality of processing functions executable for the image processing apparatus, and one of the processing functions is selected by the entering manipulation of the manipulation means.

[Claim 31] An image processing system management control method used for an image processing system in which devices including at least one image formation apparatus capable of executing a plurality of processing functions, and the communication network management apparatus retaining the management information of the devices are connected to the communication network, the method performing the use management of the image formation apparatus by the communication network management apparatus, wherein the communication network management apparatus selects a usable information formation

apparatus based on the management information, and sets the use permission conditions for the use of the selected image formation apparatus.

[Claim 32] The image processing system management control method according to claim 31, wherein the selection of the image formation apparatus by the communication network management apparatus is performed based on information relating to an installation location of the image formation apparatus, which is contained in the management information.

[Claim 33] The image processing system management control method according to claim 31 or 32, wherein the use permission condition indicates the usable processing function of the selected image formation apparatus.

[Claim 34] The image processing system management control method according to claim 31 or 32, wherein the use permission condition indicates a usable period of the selected image formation apparatus.

[Claim 35] The image processing system management control method according to claim 31 or 32, wherein the use permission condition indicates the name of a user who is permitted to use the selected image formation apparatus.

[Claim 36] The image processing system management control method according to claim 31, wherein the selection of the image formation apparatus by the communication network management apparatus is performed based on information relating to an installation location of the image formation apparatus, which is contained in the management information, the use permission conditions indicate a usable period of the selected image formation apparatus, and the use period is determined based on the name of a user who is permitted to use the selected image formation apparatus and the schedule information relating a use period of the permitted user, which are included in the management information.

[Detailed Description of the Invention]

[0001]

[Technical Field to Which the Invention Belongs] The present invention relates to an image processing system in which devices including at least one image formation apparatus capable of executing a plurality of processing functions and a communication network management

apparatus retaining the management information of the devices are connected to a communication network, and to an image processing system management control method used for the same.

[0002]

[Prior Arts] In recent years, further diversification of image processing has produced a complex type of an image formation apparatus having a printer function to print an image and character data made by a computer and a scanner function to read out a manuscript image and to send out image data expressing the manuscript image to the computer, in addition to a copy function.

[0003] This image formation apparatus is installed in a system in which a computer is connected to a network by diversification of functions thereof, and an image processing system connecting the computer and the image formation apparatus are connected through the network is constructed.

[0004] In the image processing system connecting the computer and the image formation apparatus through the network, an image processing is made possible, in which an image and character data made by the computer are sent out to the image formation apparatus through the network; the image and the character data, which have been sent from the computer, are printed by the image formation apparatus; a manuscript image is read out by the image formation apparatus; image data representing the manuscript image is sent out to the computer through the network; and the image data sent from the image formation apparatus is processed by the computer.

[0005] As this image processing system, the one has existed, which is constructed by the use of a local area network (LAN). This image processing system is generally constructed for each block such as a floor, a building and a business institution because of limitations including the number of connectable nodes and a cable length determined in accordance with the LAN standard.

[0006] By connecting the image processing system constructed by the use of this LAN to other image processing systems through a public line, the image processing system capable of being

used as WAN service is constructed, and this image processing system can be used among business institutions.

[0007] Devices in each image processing system are managed by a system manager placed for the image processing system in order to grasp the status of the use of the devices and a cost generated by the use of the devices, and to perform a security protection. For example, use permission for the devices including the image formation apparatus is set for individual users by the system manager.

[0008]

[Subjects to be Solved by the Invention] However, in the foregoing conventional image processing system, the use permission of the image formation apparatus is set for the individual users by the system manager determined for each system, in other words, the use permission of the image formation is set for the individual users. Accordingly, when a certain user uses an image formation apparatus incorporated in an image processing system in a different business institution from where he/she belongs to, he/she can not use this image formation apparatus sometimes because he/she is unregistered as the user of this image formation apparatus. As a result, he/she can not enjoy WAN service through the image formation apparatus sometimes, and such a thing may provide inconvenience to a user.

[0009] In order not to provide the inconvenience to a user, it is possible to use a method for setting the use permission of the image formation apparatus for all users without specifying a user. With this method, it is possible to use the image formation apparatus incorporated in the image processing system in each of other business institutions, and to enjoy the WAN service through the image formation apparatus therein. However, it becomes impossible to manage a section to receive bill for usage generated by the use of the image formation apparatus, and secrets leak to the outside by allowing unauthorized entries into the WAN service, thus bringing about difficulty to maintain security. Manageability for the image formation apparatus is largely damaged.

[0010] The object of the present invention is to provide an image processing system capable of enhancing convenience relating to the use of the image formation apparatus without

damaging manageability for the image formation apparatus, and to provide an image processing system management control method.

[0011]

[Means for Solving the Subjects] The invention defined in claim 1 is an image processing system in which devices including an image formation apparatus capable of executing a plurality of processing functions and a communication network management apparatus retaining the management information of the devices are connected to a communication network, wherein the communication network management apparatus sets use permission conditions for the usage of the image formation apparatus based on the management information.

[0012] The invention defined in claim 2 is an image processing system according to claim 1, wherein the use permission condition indicates the usable processing function of the image formation apparatus.

[0013] The invention defined in claim 3 is an image processing system according to claim 1, wherein the use permission condition indicates a usable period of the image formation apparatus.

[00014] The invention defined in claim 4 is an image processing system according to claim 1, wherein the use permission condition indicates the name of a user who is permitted to use the image formation apparatus.

[0015] The invention defined in claim 5 is an image processing system according to claim 1, wherein the use permission conditions indicate a usable processing function of the image formation apparatus, usable period thereof and the name of a user who is permitted to use the image formation apparatus.

[0016] The invention defined in claim 6 is an image processing system in which devices including an image formation apparatus capable of executing a plurality of processing functions, the image formation apparatus having display means, and a communication network management apparatus retaining management information of the devices are connected to a communication network, wherein the communication network management

apparatus sets use permission conditions for the usage of the image formation apparatus based on the management information, and the image formation apparatus displays the use permission conditions, which have been set, on the display means.

[0017] The invention defined in claim 7 is an image processing system according to claim 6, wherein the user permission condition indicates a usable processing function of the image formation apparatus.

[0018] The invention defined in claim 8 is an image processing system according to claim 6, wherein the use permission condition indicates a usable period of the image formation apparatus.

[0019] The invention defined in claim 9 is an image processing system according to claim 6, wherein the use permission condition indicates the name of a user who is permitted to use the image formation apparatus.

[0020] The invention defined in claim 10 is an image processing system according to claim 6, wherein the use permission conditions indicate the usable processing function of the image formation apparatus, a usable period thereof and the name of a user who is permitted to use the image formation apparatus.

[0021] The invention defined in claim 11 is an image processing system in which devices including an image formation apparatus capable of executing a plurality of processing functions, the image formation apparatus having manipulation means and display means, and a communication network management apparatus retaining the management information of the devices are connected to a communication network, wherein the communication network management apparatus sets use permission conditions for the usage of the image formation apparatus based on the management information, displays the use permission conditions, which have been set, on the display means, and can select contents indicated by the use permission conditions, in accordance with entering manipulations of the manipulation means.

[0022] The invention defined in claim 12 is an image processing system according to claim 11, wherein the use permission conditions indicate a plurality of usable processing functions of the

image formation apparatus, and one of the processing functions is selected by an entering manipulation of the manipulation means.

[0023] The invention defined in claim 13 is an image processing system in which a device including at least one image formation apparatus capable of executing a plurality of processing functions, and a communication network management apparatus are connected to a communication network, wherein the communication network management apparatus selects a usable image formation apparatus based on the management information, and sets use permission conditions for use of the selected image formation apparatus.

[0024] The invention defined in claim 14 is an image processing system according to claim 13, wherein the selection of the image formation apparatus by the communication network management apparatus is performed by information relating to an installation location of the image formation apparatus contained in the management information.

[0025] The invention defined in claim 15 is an image processing system according to claim 13 or 14, wherein the use permission condition indicates the usable processing function of the selected image formation apparatus.

[0026] The invention defined in claim 16 is an image processing system according to claim 13 or 14 wherein the use permission condition indicates a usable period of the selected image formation apparatus.

[0027] The invention defined in claim 17 is an image processing system according to claim 13 or 14, wherein the use permission condition indicates the name of a user who is permitted to use the selected image formation apparatus.

[0028] The invention defined in claim 18 is an image processing system according to claim 13, wherein the selection of the image formation apparatus by the communication network management apparatus is performed by information relating to an installation location of the image formation apparatus contained in the management information, the use permission conditions indicate a usable period of the selected image formation apparatus, and the use period is determined based on the name of a user who is permitted to use the selected information apparatus and the schedule information relating to the use period of the permitted

user, which are included in the management information.

[0029] The invention defined in claim 19 is an image processing system management control method used for an image processing system in which devices including an image formation apparatus capable of executing a plurality of processing functions, and a communication network management apparatus retaining management information of the devices are connected to a communication network, the method performing the use management of the image formation apparatus by the communication network management apparatus, wherein the communication network management apparatus sets use permission conditions for the use of the image formation apparatus based on the management information.

[0030] The invention defined in claim 20 is an image processing system management control method according to claim 19, wherein the use permission condition indicates the usable processing function of the image formation apparatus.

[0031] The invention defined in claim 21 is an image processing management control method according to claim 19, wherein the use permission condition indicates a usable period of the image formation apparatus.

[0032] The invention defined in claim 22 is an image processing system management control method according to claim 19, wherein the use permission condition indicates the name of a user who is permitted to use the image formation apparatus.

[0033] The invention defined in claim 23 is an image processing system management control method according to claim 19, wherein the use permission conditions indicate a usable processing function and usable period of the image formation apparatus and the name of a user who is permitted to use the image formation apparatus.

[0034] The invention defined in claim 24 is an image processing system management control method used for an image processing system in which devices including an image formation apparatus capable of executing a plurality of processing functions having display means, and a communication network management apparatus retaining the management information of the devices are connected to a communication network, the method performing the use management of the image formation apparatus by the communication network management

apparatus, wherein the communication network management apparatus sets use permission conditions for the use of the image formation apparatus based on the management information, and the use permission conditions set by the image formation apparatus are displayed on the display means.

[0035] The invention defined in claim 25 is an image processing system management control method according to claim 24, wherein the use permission condition indicates the usable processing function of the image formation apparatus.

[0036] The invention defined in claim 26 is an image processing system management control method according to claim 24, wherein the use permission condition indicates a usable period of the image formation apparatus.

[0037] The invention defined in claim 27 is an image processing system management control method according to claim 24, wherein the use permission condition indicates the name of a user who is permitted to use the image formation apparatus.

[0038] The invention defined in claim 28 is an image processing system management control method according to claim 24, wherein the use permission conditions indicate a usable processing function and usable period of the image formation apparatus and the name of a user who is permitted to use the image formation apparatus.

[0039] The invention defined in claim 29 is an image processing system management control method used for an image processing system in which devices including an image formation apparatus capable of executing a plurality of processing functions having manipulation means and display means, and a communication network management apparatus retaining the management information of the devices are connected to a communication network, the method performing the use management of the image formation apparatus by the communication network management apparatus, wherein the communication network management apparatus sets use permission conditions for the use of the image formation apparatus based on the management information, the use permission conditions set by the image formation apparatus are displayed on the display means, and condition contents indicated by the use permission conditions are made to be selectable in accordance with the

entering manipulation of the manipulation means.

[0040] The invention defined in claim 30 is an image processing system management control method according to claim 29, wherein the use permission condition indicates a plurality of processing functions executable for the image formation apparatus, and one of the processing functions is selected by the entering manipulation of the manipulation means.

[0041] The invention defined in claim 31 is an image processing system management control method used for an image processing system in which devices including at least one image formation apparatus capable of executing a plurality of processing functions, and a communication network management apparatus retaining the management information of the devices are connected to a communication network, the method performing the use management of the image formation apparatus by the communication network management apparatus, wherein the communication network management apparatus selects a usable information formation apparatus based on the management information, and sets the use permission conditions for the use of the selected image formation apparatus.

[0042] The invention defined in claim 32 is an image processing system management control method according to claim 31 , wherein the selection of the image formation apparatus by the communication network management apparatus is performed based on information relating to an installation location of the image formation apparatus, which is contained in the management information.

[0043] The invention defined in claim 33 is an image processing system management control method according to claim 31 or 32, wherein the use permission condition indicates the usable processing function of the selected image formation apparatus.

[0044] The invention defined in claim 34 is an image processing system management control method according to claim 31 or 32, wherein the use permission condition indicates a usable period of the selected image formation apparatus.

[0045] The invention defined in claim 35 is an image processing system management control method according to claim 31 or 32, wherein the use permission condition indicates the name of a user who is permitted to use the selected image formation apparatus.

[0046] The invention defined in claim 36 is an image processing system management control method according to claim 31, wherein the selection of the image formation apparatus by the communication network management apparatus is performed based on information relating to an installation location of the image formation apparatus, which is contained in the management information, the use permission conditions indicate a usable period of the selected image formation apparatus, and the usable period is determined based on on the name of a user who is permitted to use the selected image formation apparatus and the schedule information relating to a use period of the permitted user, which are included in the management information.

[0047]

[Embodiments of the Invention] Embodiments of the present invention will be described with reference to the drawings below.

[0048] (First Embodiment) Fig. 1 is a block diagram showing the configuration of a first embodiment of the image processing system of the present invention.

[0049] The image processing system is, as shown in Fig. 1, constructed on a wide area network (hereinafter referred to as a WAN) connecting two independent local area networks (hereinafter referred to as a LAN) 112 and 113 with a public line 116, and an image processing system is constructed on each of the LANs 112 and 113. Note that a total system including the image processing system constructed on the WAN is called a WAN system, and that a local system including the image processing system constructed on the LANs 112 and 113 is called a LAN system.

[0050] The image processing system constructed on the LAN 112 has a plurality of computers 101 and 102, an image formation apparatus 107, a facsimile machine 108 and a server 117, and the computers 101 and 102, the image formation apparatus 107, the facsimile machine 108 and the server 117 are connected so as to be capable of communicating with each other through the network 112.

[0051] Each of the computers 101 and 102 has storage means such as a hard disc, which stores an application for executing an e-mail function to perform exchanging of e-mails through the

LAN 112 between the computers 101 and 102 and a document preparation function, and executes the e-mail function and the document preparation function by launching the application stored therein. Furthermore, to the computer 102, a scanner unit 103 for scanning an image to be pasted into a prepared document and a printer 104 for printing the prepared document are connected. Each of the computers 101 and 102 stores the prepared document in its hard disc.

[0052] The image formation apparatus 107 is constituted by a complex apparatus having a copy function and a printer function which can be used as a printer of each of the host computers 101 and 102. To be concrete, the image formation apparatus 107 forms, onto a transfer material, a manuscript image read out by a manuscript reading apparatus by means of the copy function, and develops, on a bit map image, the prepared document made by each of the computers 101 and 102 by means of the printer function. Furthermore, the image formation apparatus 107 forms the developed image on the transfer material. To the image formation apparatus 107, a magneto-optical disc unit 114 is connected, and an electric filing function is constituted by the magneto-optical disc unit 114.

[0053] The facsimile machine 108 has a facsimile function in accordance with G3 standard and a simple copy function. The facsimile machine 108 is connected to the LAN 113 through a public line 116, and plays a role of a gateway for the LAN 113.

[0054] The server 117 has storage means such as a hard disc, which stores management information containing device information relating to the computers 101 and 102, the image formation apparatus 107 and the facsimile machine 108, which are connected to the LAN 112, and user information relating to a user using these devices. The server 117 manages the foregoing devices connected to the LAN 112 based on the management information. To be concrete, the server 117 sets use permission conditions for the devices with respect to each user, and manages the usage of the devices used by a user based on the use permission conditions which have been set.

[0055] The image formation system constructed on the LAN 113 has a plurality of computers 109 (other computers are not illustrated), an image formation apparatus 110, a facsimile

machine 111 and a server 118, and the computers 109, the image formation apparatus 110, the facsimile machine 111 and the server 118 are connected by a network 113 so as to be capable of communicating with each other.

[0056] Each of the computers 109 has a storage device such as a hard disc which stores an application for executing an e-mail function to exchange e-mails through the LAN 113 between the computers 109 and a document preparation function, and executes the e-mail function and the document preparation function by launching the application stored therein.

[0057] As in the case of the image formation apparatus 107, the image formation apparatus 110 is constituted by a complex apparatus having a copy function and a printer function which can be used as a printer of each of the host computers 109. A magneto-optical disc unit 115 is connected to the image formation apparatus 110, and an electric filing function is constituted by the magneto-optical disc 115.

[0058] The facsimile machine 111 has a simple copy function in addition to a facsimile function according to G3 standard. The facsimile machine 111 is connected to the LAN 112 through the public line 116, and plays a role as a gateway for the LAN 112.

[0059] The server 118 storage means such as a hard disc, which stores the management information containing device information relating to the computer 109, the image formation apparatus 110, and the facsimile machine 111, which are connected to the LAN 113, and user information relating to a user using these devices. The server 118 manages the foregoing devices connected to the LAN 113 based on the management information. To be concrete, the server 118 sets use permission conditions for the devices with respect to each user, and manages the usage of the devices used by a user based on the use permission conditions which have been set.

[0060] The servers 118 and 117 are set to be able to provide the management information and use permission conditions thereof to each other through the public line 116.

[0061] Next, the constitutions of the image formation apparatuses 107 and 110 will be described with reference to Fig. 2. Fig. 2 is a block diagram showing the constitution of the image formation apparatus 107 of Fig. 1. Note that the constitution of the image formation

apparatuses 107 is the same as that of the image formation apparatus 110, that the constitution of the image formation apparatus 107 will be described, and that the description of the constitution of the image formation apparatus 110 will be omitted.

[0062] The image formation apparatus 107 comprises control means 201 composed of a microprocessor for controlling the whole apparatus as shown in Fig. 2, and the control means 201 is operated by a real time OS (operating system). A plurality of programs such as a control program relating to a control executed by the control means 201 are stored in a hard disc (hereinafter referred to as a HDD) 202.

[0063] A copy function processing program for executing the copy function, a scanner function processing program for executing the scanner function, a printer function processing program for printing data such as a document file prepared by each computer, and a facsimile processing function for executing the facsimile function through a public line 211 solely are contained in the programs stored in the HDD 202.

[0064] The results of the computation and processing accompanied with the execution of the program of the control means 201 are stored in a memory 203, and the memory 203 is used as a work area of the control means 201.

[0065] The control means 201, the HDD 202 and the memory 203 are connected to a high-speed CPU bus 204 together with image developing means 205, image processing means 206, compression/expansion means 207 and a panel interface (hereinafter referred to a manipulation section I/F) 215. The high-speed CPU bus 204 is constituted by a bus which transfers data processed by the control means 201 to each unit such as the foregoing memory 203 at a high speed, and transfers (DMA-transfers) data among the units at a high speed.

[0066] The image developing means 205 fetches in an image formation command containing document file data from each of the computers 101 and 102 via the high-speed CPU bus 204, and develops the document file data onto the bit map image based on the image formation command, thus generating an image picture . The image picture is sent out to a high-speed image bus 216. For an image developing processing performed by an RIP, a description language including a post script, a PCL, a LIPS and a CaPSL is used.

[0067] The image processing means 206 performs a filtering processing such as a smoothing processing and an edge processing for the image picture inputted thereto from the high-speed image bus 216 based on the processing instruction of the control means 216.

[0068] The compression/expansion means 207 performs a compression processing, which uses a method including MH, MR, MMR and JPEG, for the image picture inputted from the high-speed image bus 216, and sends out the compressed data to the high-speed CPU bus 204. Alternatively, the compression/expansion means 207 sends out the compressed data to the high-speed image bus 216 again.

Furthermore, the compression/expansion means 207 expands the compressed data, which has been inputted from each of the high-speed CPU bus 204 and the high-speed image bus 216, in accordance with a compression method by an expansion processing which is opposite to the compression, and sends out the expanded data to the high-speed image bus 216.

[0069] The high-speed image bus 216 does not remain under a control of the control means 201, and a data transfer by the high-speed image bus 216 is controlled by a bus controller (not shown). To the high-speed image bus 216, a scanner unit 218 is connected through a scanner unit interface (hereinafter referred to as a scanner I/F) 217. A printer unit 220 is connected to the high-speed image bus 216 through a printer unit interface (hereinafter referred to as a printer I/F) 219.

[0070] The scanner unit 218 comprises an automatic manuscript feeding apparatus, and is composed of an image reading apparatus for reading out a manuscript image sent to a manuscript stage by the use of a reading sensor. The reading sensor is composed of an RGB three-line CCD color sensor or a one-line monochrome CCD line sensor. A manuscript image data read out by the scanner unit 218 is sent to the scanner I/F 217.

[0071] The scanner I/F 217 performs the optimum binary processing for the manuscript image data inputted thereto in order to make it responsive to subsequent processing procedures. The scanner I/F 217 performs a serial/parallel conversion which is fitted to the data width of the high-speed image bus 216, and performs a conversion from input color data of three

primary colors R, G and B to C, M, Y and Bk data. The manuscript image data processed by the scanner I/F 217 is sent out to the high-speed image bus 216.

[0072] The printer I/F 219 is composed of an interface for transferring the image data inputted from the high-speed image bus 216, and the interface has a bus width changing function to change the bus width of the high-speed image bus 216 to a bus width which is fitted to a gradation of the printer unit 220 which is an output destination, and a function to absorb a difference between a printing speed of the printer unit 220 and a transfer speed of the image data of the high-speed image bus 216.

[0073] The printer unit 220 performs an image formation processing for forming the image data outputted from the printer I/F 219 on the transfer material. For the image forming processing method, an electrophotographic technology method in which an image is formed onto a photoconductive drum by the use of a laser beam and the formed image is transferred onto a transfer material has been used, and there have been a color method by the use of C, M, Y and Bk and a monochrome method. Instead of the electrophotographic technology method, a bubble jet method for forming an image on the transfer material by spraying ink to the transfer material can be also used.

[0074] A low-speed CPU bus 209 showing a transfer speed lower than that of the high-speed CPU bus 204 is connected to the high-speed CPU bus 204 through a bus bridge 208. The bus bridge 208 performs a control to absorb a difference of the processing speed between the high-speed CPU bus 204 and the low-speed CPU bus 209, and can access an apparatus operating at a low processing speed, which is connected to the low-speed CPU bus 209, from the control means 201 by this control.

[0075] The low-speed CPU bus 209 is composed of an ISA bus and the like, and communication means 210, a LAN unit 212 and a computer I/F 214 are connected to this bus.

[0076] The communication means 210 is composed of a modem for performing a communication through the public line 211 solely, and the modem has a function to modulate digital data transferred through the low-speed CPU bus 209 and to send out the modulated digital data to the public line 211, and a function to demodulate the modulated data transferred

through the public line 211 and to send out the demodulated data to the low-speed CPU bus 209. A LAN unit 212 is composed of a unit for connecting the image formation apparatus 107 to the LAN 112, and the unit performs sending/receiving of the data among each of the computers 101 and 102, the facsimile machine 108, and the server 117.

[0077] The computer I/F 214 is composed of an interface for connecting peripheral devices such as a computer and a magneto-optical disc, and an RS-232C for performing a serial communication, a centronics interface for performing a parallel communication, an SCSI interface, an IEEE 1394 interface, a Fibre Channel interface, an SSA interface and the like are used as the interface. When a computer is connected to the computer I/F 214, sending/receiving of a control command and the like is performed between the computer and the computer I/F 214, and the image formation apparatus 107 operates as a printer to print data from the computer.

[0078] The manipulation section I/F 215 connected to the high-speed CPU bus 204 mediates data sending/receiving between manipulation means 222 and the control means 201 in such a manner that the manipulation section I/F 215 sends out a manipulation instruction inputted from the manipulation means 222, and converts a resolution of the image data sent out to the high-speed CPU bus 204 so that the image data can be displayed on display means 221 of the manipulation means 222. The image data, the resolution of which has been converted, is sent out to the manipulation means 222.

[0079] The manipulation means 222 has the display means 221 in which an touch panel enter apparatus for performing an indication manipulation for the control means 201, and a hard key group 223 for performing an indication manipulation for the control means 201. The display means 221 is composed of a liquid crystal display apparatus, and image data sent from a manipulation section I/F 215 is displayed on the display means 221. The touch panel enter apparatus provided in the display means 221 forms function keys for selecting each of the processing functions, and the hard key group 223 is composed of a start key, a ten key and the like.

[0080] Next, the constitutions of the servers 117 and 118 will be described with reference to Fig.

3. Fig. 3 is a block diagram showing the constitution of the server 117 of Fig. 1. Note that the server 117 has the same constitution as the server 118, that the constitution of the server 117 will be described and that the description of the constitution of the server 118 will be omitted.

[0081] The server 117 comprises control means 301 composed of a microprocessor for controlling the whole apparatus as shown Fig. 3, and the control means 301 is operated by a real time OS (operating system). A plurality of programs such as a control program relating to a control executed by the control means 301 and an application program are stored in first storage means 302 composed of a hard disc having a large capacity.

[0082] The programs include a management program for setting use permission conditions for each apparatus with respect to each user based on the management information which contains device information relating to each of the computers 101 and 102, the image formation apparatus 107 and the facsimile machine 108, which are connected to the LAN 112 and user information relating to a user using these devises, and for managing the user's use of the apparatuses based on the use permission conditions which have been set. The foregoing management program is stored in the first storage means 302 together with the foregoing programs.

[0083] The results of the computation and processing accompanied with the execution of the program of the control means 301 are stored in second storage means 303, and the second storage means 303 is used as a work area of the control means 301.

[0084] The control means 301, the first and second storage means 302 and 303 are connected to a high-speed CPU bus 304 together with display means 322. The high-speed CPU bus 304 transfers data processed by the control means 301 to the units of the first and second storage means 302 and 303 and the display means 322 at a high speed, and is composed of a bus for transferring (DMA transfer) data among the units at a high speed.

[0085] The display means 322 connected to the high-speed CPU bus 304 is composed of display apparatuses such as a CRT and a liquid crystal apparatus, a speaker and the like. The display apparatus displays data such as characters and images, which are obtained by the execution of the program by the control means 301, and voice information obtained by the

execution of the program by the control means 301 is sounded from the speaker.

[0086] A low-speed CPU bus 309 showing a transfer speed lower than that of the high-speed CPU bus 304 is connected to the high-speed CPU bus 304 through a bus bridge 308. The bus bridge 308 performs a control to absorb a difference of the processing speed between the high-speed CPU bus 304 and the low-speed CPU bus 309, and can access an apparatus operating at a low processing speed, which is connected to the low-speed CPU bus 309, from the control means 301 by this control.

[0087] The low-speed CPU bus 309 is composed of an ISA bus and the like, and communication means 310, a LAN unit 312, a computer I/F 314 and manipulation means 321 are connected to this bus.

[0088] The communication means 310 is a modem to communicate with external devices through a public line 311 solely, and the modem has a function to modulate digital data transferred through the low-speed CPU bus 309 and to send out the modulated digital data to the public line 311, and a function to demodulate the modulated data transferred through the public line 311 and to send out the demodulated data to the low-speed CPU bus 309.

[0089] A LAN unit 312 is composed of a unit for connecting the server 117 to the LAN 112, and the unit performs sending/receiving of the data among each of the computers 101 and 102, the image formation apparatus 107 and the facsimile machine 108.

[0090] The computer I/F 314 is composed of an interface for connecting peripheral devices, and an RS-232C for performing a serial communication, a centronics interface for performing a parallel communication, an SCSI interface, an IEEE 1394 interface, a Fibre Channel interface, an SSA interface and the like are used as the interface.

[0091] Manipulation means 321 is constituted by a keyboard and a microphone for the entering of an instruction and the entering of setting for the control means 301.

[0092] Next, the constitutions of the computers 101, 102 and 109 will be described with reference to Fig. 4. Fig. 4 is a block diagram showing the constitution of the computer 101 of Fig. 1. Note that each of the computers 101, 102 and 109 has the same constitution, that the constitution of the computer 101 will be described and that the descriptions of other computers

will be omitted.

[0093] The computer 101 comprises control means 401 composed of a microprocessor for performing a control of the whole apparatus as shown in Fig. 4, and the control means 401 is operated by a real time OS (operating system). A plurality of programs such as a control program relating to a control executed by the control means 401 and an application program are stored in first storage means 402 composed of a hard disc having a large capacity.

[0094] The results of the computation and processing accompanied with the execution of the program of the control means 401 are stored in second storage means 403, and the second storage means 403 is used as a work area of the control means 401.

[0095] The control means 401, the first and second storage means 402 and 403 are connected to the high-speed CPU bus 404 together with the display means 422. The high-speed CPU bus 404 transfers data processed by the control means 401 to units of the first and second storage means 402 and 403 and the display means 422 at a high speed, and is composed of a bus for transferring (DMA transfer) data among the units at a high speed.

[0096] The display means 422 connected to the high-speed CPU bus 404 is composed of display apparatuses such as a CRT and a liquid crystal apparatus, and a speaker. The display means 422 displays data such as characters and images, which are obtained by the execution of the program by the control means 401, and voice information obtained by the execution of the program by the control means 401 is sounded from the speaker.

[0097] A low-speed CPU bus 409 showing a transfer speed lower than that of the high-speed CPU bus 404 is connected to the high-speed CPU bus 404 through a bus bridge 408. The bus bridge 408 performs a control to absorb a difference of the processing speed between the high-speed CPU bus 404 and the low-speed CPU bus 409, and can access an apparatus operated at a low processing speed, which is connected to the low-speed CPU bus 409, from the control means 401 by this control.

[0098] The low-speed CPU bus 409 is composed of an ISA bus and the like, and communication means 410, a LAN unit 412, a computer I/F 414 and manipulation means 421 are connected to this bus.

[0099] The communication means 410 is composed of a modem to communicate through a public line 411 solely, and the modem has a function to modulate digital data transferred through the low-speed CPU bus 409 and to send out the modulated digital data to the public line 411, and a function to demodulate the modulated data transferred through the public line 411 and to send out the demodulated data to the low-speed CPU bus 409.

[0100] The LAN unit 412 is composed of a unit for connecting the computer 101 to the LAN 112, and the unit performs sending/receiving of the data among the computers 102, the image formation apparatus 107, the facsimile machine 108 and the server 117.

[0101] The computer I/F 414 is composed of an interface for connecting peripheral devices, and an RS-232C for performing a serial communication, a centronics interface for performing a parallel communication, an SCSI interface, an IEEE 1394 interface, a Fibre Channel interface, an SSA interface and the like are used as the interface.

[0102] The manipulation means 421 is constituted by a keyboard and a microphone for the entering of an instruction and the entering of setting for the control means 401.

[0103] Next, a control operation by the control means 201 of the image formation apparatus 110 of the LAN 113 will be described with reference to Figs. 5, 6 and 12. Figs. 5 and 6 are flowcharts showing a control operation by the control means 201 of the image formation apparatus 110 of Fig. 1, and Fig. 12 is a diagram showing an initial screen example of the display means in the image formation apparatus of Fig. 1.

[0104] When a power source is tuned on to power the image formation apparatus 110, an initial setting is first performed as shown in Fig. 5 (Step S101). In this initial setting, initialization of a flag and a control variable is performed, and a control program such as an OS stored in a part of the area of the second storage means 203 is executed. Initialization of each portion of the image formation apparatus 110 is performed.

[0105] After the initial setting, predetermined information (login) necessary for a procedure for a permission for starting a use to the WAN system, by an image such as characters, numeric characters and icons, is displayed on the display means 221 (Step S102). For example, the image in which the copy function is set is displayed on the display means 221 as shown in Fig.

12.

[0106] Next, when a login input is supplied from the manipulation means 222 by a user (Step S103), a server query processing is performed (Step S104). In this server query processing, in order to perform verification for permitting a connection to the WAN system and allocating usable functions and resources at the time of the verification, a query to the servers 117 and 118 which store necessary information is performed. Note that details of the server query processing will be described later.

[0107] When the query to the server succeeds (Step S105), it is judged whether the login requested based on information obtained by the query is valid or not (Steps S106 to S108). To be concrete, when the following things are satisfied, the connection to the WAN system is permitted (Step S109). Specifically, the procedure information represented by the login satisfies that he/she is a registrant (Step S106), that the date of the login is within a range of permissible dates (Step S107) and that the place of the login is a permissible place (Step S108).

[0108] On the contrary, when the query to the server is invalid (Step S105), or when the procedure information represented by the login does not satisfy any one of that he/she is a registrant (Step S106), that the date of the login is within a range of permissible dates (Step S107) and that the place of the login is a permissible place (Step S108), an alarm or an instruction by voice, a video or the like is outputted by the display means 221 (Step S110). After the alarm, the procedure returns to Step S102 again.

[0109] When the permission of the connection to the WAN system is outputted, a permission mode display processing to display function permitted to a user on the display means 221 is performed (Step S111), as shown in Fig. 6. The functions permitted to the user are those of the image formation apparatus 110 or ones of the WAN system used through the image formation apparatus 110, and the information relating to the functions permitted to the user is based on information obtained by the server query processing. For example, as the functions of the image formation apparatus 110, there are the copy function, the facsimile function, the file function and the print function as described above, and among these functions, functions permitted to a user are displayed. Furthermore, as the WAN system used through the image

formation apparatus 110, there are a remote PC connection function using other computers, a remote image formation apparatus connection function using other image formation apparatuses, a remote facsimile machine connection function using other facsimile machines, a remote print function and a mail sending/receiving function which use functions exercised by a plurality of apparatuses. Functions permitted to a user among each function are displayed. Note that details of the permission mode display processing will be described later.

[0110] Subsequently, selection entering from the manipulation means 222 for selecting a predetermined function among the permitted functions displayed on the display means 221 is waited until a termination time previously set (Step S112 and Step S113). When the selection entering from the manipulation means 222 is not made by a termination time, the connection with the WAN system is cut based on a predetermined procedure (Step S119), and the procedure returns to Step S102 again. The foregoing termination time is a final time when the connection with the WAN system is permitted.

[0111] Contrary to this, when a function is selected by the selection entering from the manipulation means 222 within a predetermined time (Step S112), a selection mode execution processing for executing a processing in accordance with the selected function is performed (Step S114). Details of this selection mode execution processing will be described later.

[0112] When the selection mode execution processing is started, the monitoring of the foregoing termination time (Step S115) and the monitoring of the termination of the selection mode execution processing (Step S117) are performed.

[0113] When the foregoing termination time comes (Step S115) before the selection mode execution processing finishes (Step S117), a termination processing is performed (Step S116). In this termination processing, the coming of the time when the procedure is terminated is displayed on the display means 221, and an acceptance of a new processing is closed. After the termination processing, the connection with the WAN system is cut based on a predetermined procedure (Step S119), and the procedure returns to Step S102 again.

[0114] When the selection mode execution processing terminates (Step S117) before the coming of the termination time (Step S115), the procedure from Step S111 is repeated until a

predetermined procedure for cutting the connection with the WAN system is entered from the manipulation means 222 (Step S118).

[0115] When the predetermined procedure for cutting the connection with the WAN system is entered from the manipulation means 222 (Step S118), the connection with the WAN system is cut based on the predetermined procedure (Step S119), and the procedure returns to Step S102 again.

[0116] Next, details of the foregoing server query processing (Step S104) will be described with reference to Fig. 7 and Figs. 15 through 18. Fig. 7 is a flowchart showing a server query processing of Step S104 of Fig. 5, and Figs. 15 through 18 are tables showing the constitution of the management information stored by the server 118 of Fig. 1. Note that this flowchart shows an example for accessing the server in the system sequentially as the occasion demands.

[0117] Referring to Fig. 7, a server register table stored in the first storage means 202 is retrieved (Step S131).

[0118] Subsequently, a server which is an objective to be queried, for example, the server 118, is selected among the servers registered in the server register table (Step S132), and an access request to the server 118 is outputted via the LAN unit 212 and the LAN 113 (Step S133).

[0119] When the server 118 allows this access request (Step S134), a request for data corresponding to the login entered in the foregoing Step S103 (shown in Fig. 5) is performed (Step S135). This requested data is used to judge whether the connection with the WAN system is permitted or not, and to judging how to allocate usable functions and resources on this occasion.

[0120] This data is stored in a storage device of the server 118 as the management information, and as an example of the management information, information is used as shown in Fig. 15, which is constituted by articles including a user's name, the business institution of a user who is permitted to use the image formation apparatus, a usable date indicating a date on which the connection is permitted, a startable time indicating a time at which the connection is permitted, a termination time indicating a time at which the connection is cut, a state of a connection with the present system, and the like.

[0121] Furthermore, as another example of the management information, as shown in Fig. 16, there is information constituted by articles including a user's name, a start date indicating a date on which the connection is permitted, a start time indicating a time at which the connection is permitted, a termination date indicating a time at which the connection is cut, the business institution of a user who is permitted to use the image formation apparatus, a state of a connection with the system, and the like.

[0122] Furthermore, as still another example of the management information, as shown in Fig. 17, there is information constituted by articles including a user's name, a date on which the connection is permitted, a start time indicating a time at which the connection is permitted, a termination time indicating a time at which the connection is cut, the business institution of a user who is permitted to use the image formation apparatus, a room such as a meeting room which is permitted to be used in this business institution, and the like.

[0123] As further still another example of the management information, as shown in Fig. 18, there is information constituted by articles including a user's name, a date on which the connection is permitted, a business institution of a user who is permitted to use the image formation apparatus, a usable function and the like. As the articles indicating usable functions, articles corresponding to a copy function, a facsimile function, a file function and a print function are provided as the functions of the image formation apparatus 110, and articles corresponding to a remote PC connection function and a remote device function are provided as the functions of the WAN system used through the image formation apparatus 110. A flag indicating existence of usability is set to each article. Note that the remote device functions include a remote image formation apparatus connection function, a remote facsimile machine connection function, a remote print function and a mail sending/receiving function which utilize functions exercised by a plurality of apparatuses, and the like.

[0124] When the server 118 allows a data request (Step S136), the data of a user corresponding to the login is sent out from the server 118 to the network 112, and an acceptance of the data sent out is performed through the LAN unit 212 (Step S137). When the data sent out is accepted, the procedure is finished.

[0125] On the contrary, when the server 118 does not allow the access request and a refusal notification is issued from the server 118 (Step S134), or when the server 118 does not allow the data request and an invalid notification is issued from the server 118 (Step S136), the next server, for example, the server 117, finds out the data request by retrieving the server register table (Step S138), and the procedure from Step S132 is repeated for the server 117.

[0126] When the next server is not found out (Step S138), an error flag is written to a predetermined area of the second storage means 203 (Step S139), and the procedure is finished.

[0127] As described above, in accordance with the use permission conditions set by the use of the foregoing data, the image formation apparatus is managed in association with a reservation of a meeting room and the like, and it is possible to enhance convenience relating to the use of the image formation apparatus.

[0128] Details of the foregoing permission mode display processing (Step S111 in Fig. 6) will be described with reference to Figs. 8, 13 and 14. Fig. 8 is a flowchart showing a permission mode display processing of Step S111 of Fig. 6, and Figs. 13 and 14 are diagrams showing display examples by the permission mode display processing of Step S111 of Fig. 6.

[0129] Referring to Fig. 8, the reading of the permission mode data, which shows a usable function to a user, from data obtained by the server query processing (Step S104 shown in Fig. 5) is performed (Step S141), and a permission mode shown by the permission mode data is read out (Step S142).

[0130] Subsequently, it is judged whether the permission mode is a local function or a remote function (Step S143). Herein, the local function is the copy function, the facsimile function and the file function which the image formation apparatus 110 comprise. The remote function is the remote PC connection function and the remote device connection function which are functions of the WAN system used through the image formation apparatus 110.

[0131] When the permission mode is the local function, it is judged whether the permission mode is any one of the copy function, the facsimile function and the file function (Step S144), and a usable function is set in accordance with the result of the judgment (Steps S145, S146

and S147). When one function is set, it is judged whether there is data indicating the next permission mode (Step S151). When there is the data indicating the next permission mode, the procedure from Step S143 is performed again.

[0132] When the permission mode is the remote function (Step S143), it is judged whether the permission mode is the remote PC connection mode or the remote device connection function (Step S148). A usable function is set in accordance with the result of the judgment (Step S149, S150), and it is judged whether there is data indicating the next permission mode (Step S151). When there is data indicating the next permission mode, the procedure from Step S143 is performed again.

[0133] When there is no data indicating the next permission mode any more, a display processing for displaying information, which indicates usable functions having been set, in the form of voice and a video on the display means 221 (Step S152), and the procedure is finished.

[0134] For example, when the permission mode having been set is the local functions including the copy function, the facsimile function and the file function, and when the permission mode is the remote functions including the remote PC connection function and the remote device connection function as shown in Fig. 13, the display means 221 displays "Mr. Taro Suzuki" who is a user, "22nd Meeting Room in B Works" which is a place where this image formation apparatus is set up, and "5:00 p.m." which is a termination time at which the use of the image formation apparatus is permitted. At the same time, the display means 221 sequentially sends out a permission mode having been set by a sending manipulation to be displayed. In this example of the image, the information indicating the remote PC connection function, which is represented by the words "Remote PC is Available", is displayed.

[0135] Furthermore, when the permission mode having been set is the remote function including the remote PC connection function and the remote device connection function, as shown in Fig. 14, the display means 221 displays "Mr. Taro Suzuki" who is a user, "22nd Meeting Room in B Works" which is a place where this image formation apparatus is set up, and "5:00 p.m." which is a termination time at which the use of the image formation apparatus is permitted. The display means 221 displays "Remote PC is Available", which is the

information indicating the permission mode having been set.

[0136] Next, details of the foregoing selection mode execution processing (Step S114 shown in Fig. 6) will be described with reference to Fig. 9. Fig. 9 is a flowchart showing a selection mode execution processing of Step S114 of Fig. 6.

[0137] Referring to Fig. 9, it is judged whether the selected mode is the local function or the remote function (Step S161).

[0138] When the selected mode is the local function, it is judged whether the mode is any one of the copy function, the facsimile function and the file function (Step S162), and a processing for any of the copying function, the facsimile function and the file function is performed (Steps S163, S164 and S165)

[0139] When the selected mode is the remote function (Step S166), it is judged whether the mode is the remote PC connection mode or the remote device connection function (Step S166). Either of the remote PC connection function or the remote device connection function is performed in accordance with the result of the judgment (Steps S167 and S168).

[0140] When the processing for the selected mode is executed, the procedure is finished.

[0141] Next, a control operation by the control means 301 of the server 117 will be described with reference to Fig. 10. Fig. 10 is a flowchart showing a control operation by the control means of the server 117 of Fig. 1.

[0142] When a power source is tuned on to power the server 117, an initial setting is first performed as shown in Fig. 10 (Step S171). In this initial setting, initialization of a flag, a control variable and the like is performed, and a control program such as an OS stored in a part of the area of the second storage means 303 is executed. Initialization of each portion is performed.

[0143] Subsequently, an access request is outputted form the image formation apparatus 110 through the network 113, the facsimile machine 111, the public line 116, the facsimile machine 108 and the network 112 (Step S172), it is judged based on the information stored in the predetermined area of the first storage means 302 whether the access request from the image formation apparatus 110 is valid or not (Step S173).

[0144] When the access request from the image formation apparatus 110 is not valid, a refusal notification is outputted to the image formation apparatus 110 (Step S174), and the procedure returns to Step S172 again.

[0145] On the contrary, when the access request from the image formation apparatus 110 is valid (Step S173), a notification to permit the access is outputted to the image formation apparatus 110, and, at the same time, it is judged whether a mode corresponding to a login is a query mode or a data entering mode (Step S175).

[0146] When a mode corresponding to the login is a query mode, a data file is opened in a reading mode (Step S176), and the data of a user corresponding to the login is retrieved from the data file (Step S177). When the data of the user corresponding to the login is not found out by the retrieval (Step S178), an invalid notification is outputted to the image formation apparatus 110 (Step S181), and the data file is closed (Step S188).

[0147] After the data file is closed, the procedure returns to Step S172 again.

[0148] When the data corresponding to the login is found by the retrieval (Step S178), the data is transferred to the image formation apparatus 110 through the network 112, the facsimile machine 108, the public line 116, the facsimile machine 111 and the network 113 (Step S179).

[0149] Until subsequent data corresponding to the login passes out of existence (Step S180), a series of procedures from Step S177 is performed repeatedly. When the next data corresponding to the login passes out of existence, the data file is closed (Step S188), and the procedure returns to Step S172 again.

[0150] When a mode corresponding to the login is a data entering mode, the data file is opened in a writing mode (Step S182), and an acceptance of the entering data of the user corresponding to the login is performed (Step S183).

[0151] When the entering data is normal (Step S184), description contents described in the data file of the user corresponding to the login are updated (Step S185).

[0152] Subsequently, when another data entering is performed (Step S186), the procedure from Step S183 is executed. When the data entering is finished (Step S186), the data file is closed (Step S188), and the procedure returns to Step S172 again. When the entering data is

not normal (Step S184), an invalid notification is outputted to the image formation apparatus 110 (Step S 187), and the data file is closed (Step S188). Thereafter, the procedure returns to Step S172 again.

[0153] The description contents described in the foregoing data file are the description contents shown in Figs. 15 through 18 as described already, and an explanation for it will be omitted.

[0154] Next, a control operation by the control means 401 of the computer 101 will be described with reference to Fig. 11. Fig. 11 is a flowchart showing a control operation by the control means of the computer 101 of Fig. 1.

[0155] When a power source is tuned on to power the computer 101, an initial setting is first performed as shown in Fig. 11 (Step S191). In this initial setting, initialization of a flag and a control variable is performed, and a control program such as an OS stored in a part of the area of the second storage means 403 is executed. Initialization of each portion is performed. Predetermined information is displayed on the display means 422 by images such as characters, numeric characters and icons.

[0156] Subsequently, when the entering from the manipulation means 422 is made (Step S192), it is judged based on an entering command whether the entering is a login or not (Step S193). If the entering command is not the login, the processing in accordance with the entering is performed (Step S195), and the procedure returns to Step S192 again.

[0157] If the entering command is the login, a server query processing is performed (Step S194). In this server query processing, in order to perform verification for permitting a connection to the WAN system and to allocate usable functions and resources at the time of the verification, a query to the servers 117 and 118 which store necessary information is performed. Note that details of the server query processing are as described above.

[0158] When the server refuses the query (Step S196), an alarm or an instruction by voice, a video or the like is outputted by the display means 421 (Step S197). The procedure returns to Step S192 again.

[0159] If the query to the server is performed successfully (Step S196), and if the data entering is performed for data obtained by the query (Step S198), the data file is opened in a writing

mode (Step S199), and data relating to a user which is set is entered (Step S200). The entered data is the data of the description contents described in Figs. 15 through 18, and explanations for it will be omitted.

[0160] If the data entering is not performed (Step S198), the procedure returns to Step S192.

[0161] Subsequently, it is judged whether the entering data is normal or not (Step S201). If the entering data is not normal, an alarm or an instruction by voice, a video or the like is outputted by the display means 421 (Step S204). The procedure returns to Step S205 again.

[0162] If the entering data is normal, the updating of the data file is performed (Step S202). If another data is entered after the updating of the data file (Step S203), the procedure from the Step S200 is executed. When the data entering is finished (Step S203), the data file is closed (Step S205), and the data file is transferred to a corresponding server through a network (Step S206). After the transfer of the data file, the procedure returns to Step S192 again.

[0163] In accordance with the above-mentioned procedures, since the use permission conditions for the image formation apparatuses 107 and 110 are set based on a usable processing function, a usable period and the like, which are described for each user of the data file stored in the servers 117 and 118, a certain user can be easily registered as the user of the image formation apparatus so that the user can use the image formation apparatus incorporated in an image processing system in a different work from where the user belongs. It is possible to enhance convenience concerning the use of the image formation apparatuses 107 and 110 without damaging manageability for the image formation apparatuses 107 and 110.

[0164] Since the use permission conditions such as the usable period including the permission mode which has been set on the image formation apparatus side are displayed on the display means 221, and since the permission mode is selected in accordance with the entering manipulation of the manipulation means 222, the user of the image formation apparatus can easily grasp the use conditions for the image formation apparatus.

[0165] (Second Embodiment) Next, a second embodiment of the present invention will be described with reference to Figs. 19 through 21. Fig. 19 is a flowchart showing a server query

processing in the second embodiment of the image processing system of the present invention, and Figs. 20 and 21 are flowcharts showing a control operation of a server accessed by the query processing of Fig. 19.

[0166] This embodiment has the same constitution as that of the first embodiment. Although the query processing and the control operation of the server accessed by the query processing are different from that of the first embodiment, other processings are the same as those shown in Figs, 5, 6, 8, 9, and 11. Accordingly, different portions will be described.

[0167] Next, details of the server query processing in this embodiment (Step S104 shown in Fig. 5) will be described with reference to Fig. 19. In this embodiment, an example which a server in the same node is first accessed from the image formation apparatus 110, and one of other servers is accessed from this server as the occasion arises, will be described.

[0168] Referring to Fig. 19, a server in the same node, for example, the server 118, is selected as a server which is an objective to be queried (Step S211), and an access request for the server 118 is outputted through the LAN unit 212 and the LAN 113 (Step S212).

[0169] When the server 118 authenticates this access request (Step S213), the request of data corresponding to the login entered in Step S103 (shown in Fig. 5) is performed (Step S215). This requested data is used to judge whether a connection to the WAN system is permitted or not, and to judge how to allocate usable functions and resources at the time of the connection to the WAN system.

[0170] This data is stored in a storage device of the server 118 as the management information, and the management information is constituted as shown in Figs. 15 through 18 as in the case of the first embodiment.

[0171] When the server 118 authenticates a data request (Step S216), the data of a user corresponding to the login is sent out from the server 118, and an acceptance of the data sent out is performed through the LAN unit 212 (Step S217). When the data sent out is accepted, the procedure is finished.

[0172] Contrary to this, when the server 118 does not authenticate the access request and when a refusal notification is issued from the server 118 (Step S213), or when the server 118

does not authenticate the data request and when an invalid notification is issued from the server 118 (Step S216), an error flag is written to the predetermined area of the second storage means 203 (Step S214), and the procedure is finished.

[0173] Next, a control operation by the server 118 will be described with reference to Figs. 20 and 21.

[0174] When a power source is tuned on to power the server 118, an initial setting is first performed as shown in Fig. 20 (Step S221). In this initial setting, initialization of a flag and a control variable is performed, and a control program such as an OS stored in a part of the area of the second storage means 303 is executed. Initialization of each portion is performed.

[0175] Next, when an access request is outputted from the image formation apparatus 110 through the network 113 (Step S222), it is judged based on information stored in the predetermined area of the first storage means 302 whether the access request from the image formation apparatus 110 (Step S223).

[0176] If the access request from the image formation apparatus 110 is not valid, a query is outputted to one of other servers, for example, the server 117, through the network 113, the facsimile machine 111, the public line 116, the facsimile machine 108 and the network 112 (Step S224). This query is performed to one of other servers sequentially as the occasion arises.

[0177] If one of other servers does not authenticate an access by this query (Step S225), a refusal notification is sent to the image formation apparatus 110 (Step S227), and the procedure is finished.

[0178] If one of other server authenticates an access by the query (Step S225), an acceptance of the data from one of other servers is performed (Step S226), and a processing of Step S229 is executed.

[0179] Contrary to this, when an access request from the image formation apparatus 110 is valid (Step S223), a notification indicating an acceptance of the access is outputted to the image formation apparatus 110, and, at the same tine, it is judged whether this access is made by one of other servers (Step S228).

[0180] When the access is made by one of other servers, it is judged when the access is the data reading or the data writing as shown in Fig. 21 (Step S237). When the access is the data reading, the data file is transferred to one of other servers (Step S238), the procedure returns to Step S222. When the access is the data writing, an acceptance of the data file is performed (Step S239), and the procedure returns to Step S222.

[0181] When the access is not made by one of other servers (Step S228), or when an acceptance of the data from one of other servers is performed (Step S226), it is judged whether the mode corresponding to the login is a query mode or a data entering mode (Step S229).

[0182] When the mode corresponding to the login is a query mode, the data file is opened in a reading mode (Step S230), and the data of a user corresponding to the login is retrieved from the data file (Step S231). When the data of the user corresponding to the login is not found out by the retrieval (Step S232), an invalid notification is outputted to the image formation apparatus 110 (Step S235), and the data file is closed (Step S236).

[0183] After the data file is closed, the procedure returns to Step S222 again.

[0184] When the data of a user corresponding to the login is found out by the retrieval (Step S232), the data is transferred to the image formation apparatus 110 through the network 113 (Step S233).

[0185] Until subsequent data corresponding to the login passes out of existence (Step S234), a series of procedures from Step S231 is performed repeatedly. When the next data corresponding to the login passes out of existence, the data file is closed (Step S236), and the procedure returns to Step S222 again.

[0186] When a mode corresponding to the login is a data entering mode, the data file is opened in a writing mode as shown in Fig. 21 (Step S240), and an acceptance of the entering data of a user corresponding to the login is performed (Step 241).

[0187] When the entering data is normal (Step S242), description contents described in the data file of a user corresponding to the login are updated (Step S243).

[0188] Subsequently, when another data entering is performed (Step S244), the procedure from Step S241 is executed. When the data entering is finished (Step S244), the data file is

closed (Step S246), and it is judged whether the data of the data file is the data from one of other servers (Step S247).

[0189] When the data of the data file is the data from one of other servers, the procedure returns to Step S222. When the data of the data file is not the data from one of other servers, the writing of the data file is performed (Step S248). After the writing of the data file, the procedure returns to Step S222 again.

[0190] When the entering data is not normal (Step S242), an invalid notification is outputted to the image formation apparatus 110 (Step S245), and the procedure from Step S246 is executed.

[0191] The description contents described in the foregoing data file are the description contents shown in Figs. 15 through 18 as described already, and an explanation for it will be omitted.

[0192] (Third Embodiment) Next, a third embodiment of the present invention will be described with reference to Figs. 22 through 25. Figs. 22 and 23 are flowcharts showing a control operation by the control means 201 of the image formation apparatus 110 in the third embodiment of the image processing system of the present invention, and Fig. 24 is a flowchart showing a permission mode display processing of Step S265 of Fig. 23. Fig. 25 is a flowchart showing a selection mode execution processing of Step S267 of Fig. 23.

[0193] This embodiment has the same constitution as that of the first embodiment, and since, in this embodiment, the control operation of the image formation apparatus 110 differs from that of the first embodiment, the different parts of the control operation will be described. Note that other processings thereof are the same as those of the first embodiment and that the descriptions of the same part as those of the first embodiment will be omitted.

[0194] The control operation by the control means 201 of the image formation apparatus 110 of the LAN 113 will be described with reference to Figs. 22 and 23.

[0195] When a power source is tuned on to power the image formation apparatus 110, an initial setting is first performed as shown in Fig. 22 (Step S251). In this initial setting, initialization of a flag and a control variable is performed, and a control program such as an OS stored in a part of the area of the second storage means 203 is executed. Initialization of each

portion is performed.

[0196] After the initial setting, necessary predetermined information, by an image such as characters, numeric characters and icons, is displayed on the display means 221 (Step S252).

[0197] Next, when the entering manipulation from the manipulation means 222 is made by a user (Step S253), it is judged whether the entering manipulation is a login input (Step S254).

[0198] When the entering manipulation is the login input (Step S254), predetermined information necessary for a procedure for starting use (a login), by images such as characters, numeric characters and icons, is displayed on the display means 221 (Step S255).

[0199] Next, when the entering manipulation relating the login is made (Step S256), a server query processing is performed (Step S258). In this server query processing, in order to authenticate permission for a connection with the WAN system, and to allocate usable functions and resources at the time of the authentication, a query is performed to the servers 117 and 118 which store necessary information for the authentication. Note that details of the server query processing will be described later.

[0200] When the query to the server succeeds (Step S259), it is judged whether the login requested based on information obtained by the query is valid or not (Steps S260 to S262). To be concrete, when the following things are satisfied, the connection to the WAN system is permitted (Step S264). Specifically, the procedure information represented by the login satisfies that he/she is a registrant (Step S260), that a date of the login is within a range of permissible dates (Step S261) and that a place of the login is a permissible place (Step S262).

[0201] On the contrary, when the query to the server is invalid (Step S259), or when the procedure information represented by the login does not satisfy any one of that he/she is a registrant (Step S260), that a date of the login is within a range of permissible dates (Step S261) and that a place of the login is a permissible place (Step S262), an alarm or an instruction by voice, a video or the like is outputted by the display means 221 (Step S263). After the alarm, the procedure returns to Step S252 again.

[0202] When the permission of the connection to the WAN system is outputted as shown in Fig. 23, a permission mode display processing to display function permitted to a user on the display

means 221 is performed (Step S265). Note that details of the permission mode display processing will be described later.

[0203] Subsequently, the selection entering from the manipulation means 222 for selecting a predetermined function among the permitted functions displayed on the display means 221 is waited until a termination time previously set (Step S266 and Step S271). When the selection entering from the manipulation means 222 is not made by the termination time, the connection with the WAN system is cut based on a predetermined procedure (Step S273), and the procedure returns to Step S252 again. The foregoing termination time is a final time when the connection with the WAN system is permitted.

[0204] Contrary to this, when a function is selected by the selection entering from the manipulation means 222 within a predetermined time (Step S266), a selection mode execution processing for executing a processing in accordance with the selected function is performed (Step S267). Details of this selection mode execution processing will be described later.

[0205] When the selection mode execution processing is started, the monitoring of the foregoing termination time (Step S268) and the monitoring of the termination of the selection mode execution processing (Step S269) are performed.

[0206] When the foregoing termination time comes (Step S268) before the selection mode execution processing finishes (Step S269), a termination processing is performed (Step S272). In this termination processing, the coming of the time when the procedure is terminated is displayed on the display means 221, and an acceptance of a new processing is closed. After the termination processing, the connection with the WAN system is cut based on a predetermined procedure (Step S273), and the procedure returns to Step S252 again.

[0207] When the selection mode execution processing terminates (Step S269) before the coming of the termination time (Step S268), the procedure from Step S265 is repeated until a predetermined procedure for cutting the connection with the WAN system is entered from the manipulation means 222 (Step S270).

[0208] When the predetermined procedure for cutting the connection with the WAN system is entered from the manipulation means 222 (Step S270), the connection with the WAN system

is cut based on the predetermined procedure (Step S273), and the procedure returns to Step S252 again.

[0209] Next, details of the foregoing permission mode display processing (Step S265 shown in Fig. 23) will be described with reference to Fig. 24.

[0210] Referring to Fig. 24, the reading of the permission mode data indicating a function usable for a user is first performed from data obtained by the server query processing (Step S258 shown in Fig. 22) (Step S281), and a permission mode first shown by the permission mode data is read out (Step S282).

[0211] Subsequently, it is judged whether the permission mode is a remote PC connection function of a remote function or a remote device connection function thereof (Step S283).

[0212] When the permission mode is the remote PC connection function, the remote PC connection function is set as the permission mode (Step S284). When the permission mode is the remote device connection function, the remote device connection function is set as the permission mode (Step S285).

[0213] When one function is set, it is judged whether there is data indicating the next permission mode (Step S286). When there is data indicating the next permission mode, the procedure from Step S283 is performed again.

[0214] When the data indicating the next permission mode passes out of existence, a display processing, in which information indicating the usable function having been set is displayed by voice, a video and the like on the display means 221, is performed (Step S287), and the procedure is finished.

[0215] Next, details of the foregoing selection mode execution processing (Step S267 shown in Fig. 23) will be described with reference to Fig. 25.

[0216] Referring to Fig. 25, it is first judged whether the selected mode is the remote PC connection function of the remote function or the remote device connection function thereof (Step S291).

[0217] When the permission mode is the remote PC connection function, the remote PC connection function is executed (Step S292). When the permission mode is the remote device

connection function of the remote function, the remote device connection function is executed (Step S293).

[0218] Although an example of the image processing system which connects the two independent networks by the public line was explained in each embodiment as described above, it is possible to constitute an image processing system which connects a large number of networks by the public line to each other.

[0219] Furthermore, though one server for managing the devices on the network is provided for each network, it is a matter of course that the devices on the network can be managed by the use of a plurality of servers.

[0220] A constitution in which the devices on a plurality of networks connected by the public line or the like are managed by one server may be adopted.

[0221] As the functions which the image formation apparatus can process, the foregoing local function and the foregoing remote function were exemplified, and the function which the image formation apparatus can process is not limited to this.

[0222]

[Effects of the Invention] As described above, according to the image processing system defined in claim 1, since the use permission conditions for the use of the image formation apparatus are set by the communication network management apparatus based on the management information, it is possible to enhance convenience relating to the use of the image formation apparatus without damaging manageability for the image formation apparatus.

[0223] According to the image processing system defined in claim 2, it is possible to use the usable processing function of the image formation apparatus as the use permission conditions.

[0224] According to the image processing system defined in claim 3, it is possible to use the usable period of the image formation apparatus as the use permission conditions.

[0225] According to the image processing system defined in claim 4, it is possible to use the name of a user who is permitted to use the image formation apparatus as the use permission condition.

[0226] According to the image processing system defined in claim 5, since the usable processing

function of the image formation apparatus, the usable period of the image formation apparatus and the name of a user who is permitted to use the image formation apparatus are used as the use permission condition, it is possible to further enhance convenience relating to the use of the image formation apparatus.

[0227] According to the image processing system defined in claim 6, since the use permission conditions for the use of the image formation apparatus are set by the image formation apparatus based on the management information, and since the use permission conditions set by the image formation apparatus are displayed on the display means, it is possible to enhance convenience relating to the use of the image formation apparatus without damaging manageability for the image formation apparatus, and it is possible to confirm the usability of the image formation apparatus by a user.

[0228] According to the image processing system defined in claim 7, it is possible to use the usable processing function of the image formation apparatus as the use permission condition.

[0229] According to the image processing system defined in claim 8, it is possible to use the usable period of the image formation apparatus as the use permission condition.

[0230] According to the image processing system defined in claim 9, it is possible to use the name of a user who is permitted to use the image formation apparatus as the use permission condition.

[0231] According to the image processing system defined in claim 10, since the usable processing function of the image formation apparatus, the usable period of the image formation apparatus, and the name of a user who is permitted to use the image formation apparatus are used as the use permission conditions, it is possible to further enhance convenience relating to the use of the image formation apparatus.

[0232] According to the image processing system defined in claim 11, since the use permission conditions for the use of the image formation apparatus are set by the image formation apparatus based on the management information, since the use permission conditions set by the image formation apparatus are displayed on the display means, and since the condition contents shown by the use permission conditions can be selected according to the entering

manipulation of the manipulation means, it is possible to enhance convenience relating to the use of the image formation apparatus without damaging manageability for the image formation apparatus, and it is possible to confirm the usability of the image formation apparatus by a user.

[0233] According to the image processing system defined in claim 12, since a plurality of the usable processing functions of the image formation apparatus are shown as the use permission conditions, and since one of the processing functions is selected by the entering processing of the manipulation means, it is possible to further enhance convenience relating to the use of the image formation apparatus.

[0234] According to the image processing system defined in claim 13, since a usable image formation apparatus is selected by the communication network management apparatus based on the management information, and since the use permission conditions for the use of the selected image formation apparatus are set, it is possible to enhance convenience relating to the use of the image formation apparatus without damaging manageability for the image formation apparatus, and it is possible to widen a selection range of the usable image formation apparatus by a user.

[0235] According to the image processing system defined in claim 14, since the selection of the image formation apparatus by the communication network management apparatus is performed based on information relating to a place where the foregoing image formation apparatus is set up, which is included in the management information, it is possible to select the image formation apparatus suitable for a user.

[0236] According to the image processing system defined in claim 15, it is possible to use the usable processing function of the image formation apparatus selected as the use permission condition.

[0237] According to the image processing system defined in claim 16, it is possible to use the usable period of the image formation apparatus selected as the use permission condition.

[0238] According to the image processing system defined in claim 17, it is possible to use the name of a user who is permitted to use the image formation apparatus selected as the use

permission condition.

[0239] According to the image processing system defined in claim 18, since the selection of the image formation apparatus by the communication network management apparatus is performed based on information relating to a place where the image formation apparatus is set up, which is included in the management information, since the usable period of the image formation apparatus selected as the use permission condition is used, and since the use period is determined based on the name of a user who is permitted to use the selected image formation apparatus and the schedule information relating to a use period of the permitted user, which are included in the management information, it is possible to set the use permission conditions of the image formation apparatus suitably.

[0240] According to the image processing system management control method defined in claim 19, since the use permission conditions for the use of the image formation apparatus are set by the communication network apparatus based on the management information, it is possible to enhance convenience relating to the image formation apparatus without damaging manageability for the image formation apparatus.

[0241] According to the image processing system management control method defined in claim 20, it is possible to use the usable processing function of the image formation apparatus as the use permission condition.

[0242] According to the image processing system management control method defined in claim 21, it is possible to use the usable period of the image formation apparatus as the use permission condition.

[0243] According to the image processing system management control method defined in claim 22, it is possible to use the name of a user who is permitted to use the image formation apparatus as the use permission condition.

[0244] According to the image processing system management control method defined in claim 23, since the usable processing function of the image formation apparatus, the usable period thereof, and the name of a user who is permitted to use the image formation apparatus are used as the use permission conditions, it is possible to further enhance convenience relating to

the use of the image formation apparatus.

[0245] According to the image processing system management control method defined in claim 24, since the use permission conditions for the use of the image formation apparatus are set by the communication network apparatus based on the management information, and since the use permission conditions set by the image formation apparatus are displayed on the display means, it is possible to enhance convenience relating to the use of the image formation apparatus, and it is possible to confirm usability of the image formation apparatus by a user easily.

[0246] According to the image processing system management control method defined in claim 25, it is possible to use the usable processing function of the image formation apparatus as the use permission condition.

[0247] According to the image processing system management control method defined in claim 26, it is possible to use the usable period of the image formation apparatus as the use permission condition.

[0248] According to the image processing system management control method defined in claim 27, it is possible to use the name of a user who is permitted to use the image formation apparatus as the use permission condition.

[0249] According to the image processing system management control method defined in claim 28, since the usable processing function of the image formation apparatus, the usable period thereof, and the name of a user who is permitted to use the image formation apparatus are used as the use permission conditions, it is possible to further enhance convenience relating to the use of the image formation apparatus.

[0250] According to the image processing system management control method defined in claim 29, since the use permission conditions for the use of the image formation apparatus are set by the communication network apparatus based on the management information, since the use permission conditions set by the image formation apparatus are displayed on the display means, and since condition contents indicated by the use permission conditions are made to be selectable according to the entering manipulation of the manipulation means, it is possible to

enhance convenience relating to the use of the image formation apparatus without damaging manageability for the image formation apparatus, and it is possible to widen a selection range of the usable image formation apparatus by a user.

[0251] According to the image processing system management control method defined in claim 30, since a plurality of the usable processing functions of the image formation apparatus are used as the use permission conditions, and since one of the processing functions is selected by the entering manipulation of the manipulation means, it is possible to further enhance convenience relating to the use of the image formation apparatus.

[0252] According to the image processing system management control method defined in claim 31, since a usable image formation apparatus is selected by the communication network management apparatus based on the management information and since the use permission conditions for the use of the image formation apparatus are set, it is possible to enhance convenience for the user of the image formation apparatus without damaging manageability for the image formation apparatus, and it is possible to widen a selection range of the usable image formation apparatus by a user..

[0253] According to the image processing system management control method defined in claim 32, since the selection of the image apparatus is performed by the communication network apparatus based on information relating to a place where the image apparatus is set up, which is included in the management information, it is possible to select an image formation apparatus suitable for a user.

[0254] According to the image processing system management control method defined in claim 33, it is possible to use the usable processing function of the image formation apparatus selected as the use permission condition.

[0255] According to the image processing system management control method defined in claim 34, it is possible to use the usable period of the image formation apparatus selected as the use permission condition.

[0256] According to the image processing system management control method defined in claim 35, it is possible to use the name of a user who is permitted to use the image formation

apparatus selected as the use permission condition.

[0257] According to the image processing system management control method defined in claim 36, the selection of the image apparatus is performed by the communication network management apparatus based on information relating to a place where the image apparatus is set up, which is included in the management information, since the usable period of the image formation apparatus for which the use permission conditions are selected is shown, and since the use period is determined based on the name of a user who is permitted to use the selected image formation apparatus and the schedule information relating to a use period of the permitted user, which are included in the management information, it is possible to set the use permission conditions of the image formation apparatus suitably.

[Brief Description of the Drawings]

[Figure 1] Fig. 1 is a block diagram showing the constitution of a first embodiment of the image processing system of the present invention.

[Figure 2] Fig. 2 is a block diagram showing the constitution of an image formation apparatus 107 of Fig. 1.

[Figure 3] Fig. 3 is a block diagram showing the constitution of a server 117 of Fig. 1.

[Figure 4] Fig. 4 is a block diagram showing the constitution of a computer 101 of Fig. 1.

[Figure 5] Fig. 5 is a flowchart showing a control operation by control means 201 of an image formation apparatus 110 of Fig. 1.

[Figure 6] Fig. 6 is a flowchart showing an control operation by the control means 201 of the image formation apparatus 110 of Fig. 1.

[Figure 7] Fig. 7 is a flowchart showing a server query processing of Step S104 of Fig. 5.

[Figure 8] Fig. 8 is a flowchart showing a permission mode display processing of Step S111 of Fig. 6.

[Figure 9] Fig. 9 is a flowchart showing a selection mode execution processing of Step S114 of Fig. 6.

[Figure 10] Fig. 10 is a flowchart showing a control operation by control means of a server 117 of Fig. 1.

[Figure 11] Fig. 11 is a flowchart showing a control operation by control means of the computer 101 of Fig. 1.

[Figure 12] Fig. 12 is a diagram showing the initial screen example of display means in the image formation apparatus of Fig. 1.

[Figure 13] Fig. 13 is a diagram showing a display example by a permission mode display processing of Step 111 of Fig. 6.

[Figure 14] Fig. 14 is a diagram showing a display example by a permission mode display processing of Step 111 of Fig. 6.

[Figure 15] Fig. 15 is a diagram showing the constitution of the management information held by a server 118 of Fig. 1.

[Figure 16] Fig. 16 is a diagram showing the constitution of the management information held by the server 118 of Fig. 1.

[Figure 17] Fig. 17 is a diagram showing the constitution of the management information held by the server 118 of Fig. 1.

[Figure 18] Fig. 18 is a diagram showing the constitution of the management information held by the server 118 of Fig. 1.

[Figure 19] Fig. 19 is a flowchart showing a server query processing in a second embodiment of an image processing system of the present invention.

[Figure 20] Fig. 20 is a flowchart showing the control operation of a server accessed in the query processing of Fig. 19.

[Figure 21] Fig. 21 is a flowchart showing the control operation of a server accessed in the query processing of Fig. 19.

[Figure 22] Fig. 22 is a flowchart showing a control operation by control means 201 of the image formation apparatus 110 in a third embodiment of the image processing system of the present invention.

[Figure 23] Fig. 23 is a flowchart showing the control operation by the control means 201 of the image formation apparatus 110 in the third embodiment of the image processing system of the present invention.

[Figure 24] Fig. 24 is a flowchart showing a permission mode display processing of Step S265 of Fig. 23.

[Figure 25] Fig. 25 is a flowchart showing a selection mode execution processing of Step S267 of Fig. 23.

[Explanation of Reference Numerals]

101, 102 and 109 ... computer; 107 and 110 ... image formation apparatus; 108 and 111... facsimile machine; 112 and 113... LAN (network); 116 ... public line; 117 and 118 ... server; 201, 301 and 401 ... control means; 202 ... HDD; 203.... memory; 221, 321 and 421 ... manipulation means; 222, 322 and 422 ... display means; 302 and 402 ... first storage means; 303 and 403 ... second storage means

Fig. 1

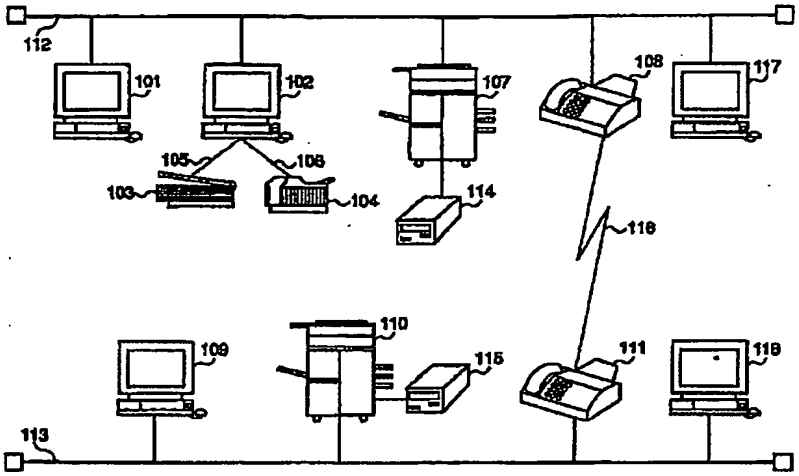


Fig. 2

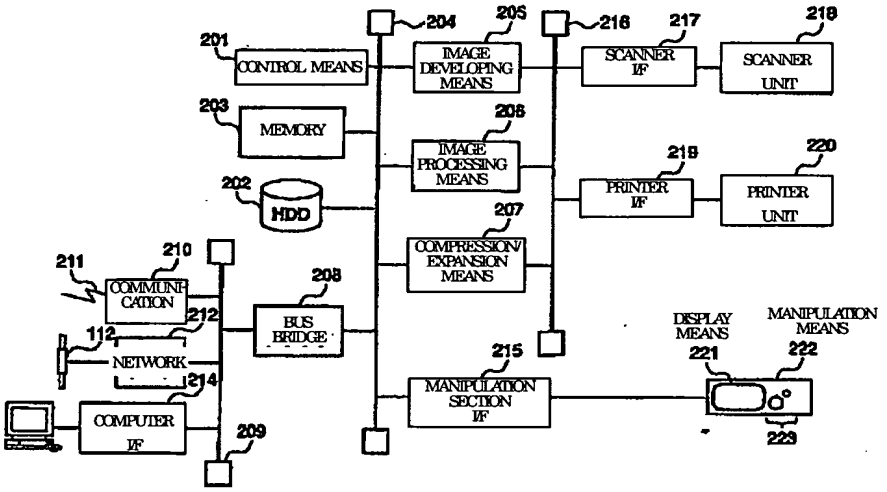


Fig. 12

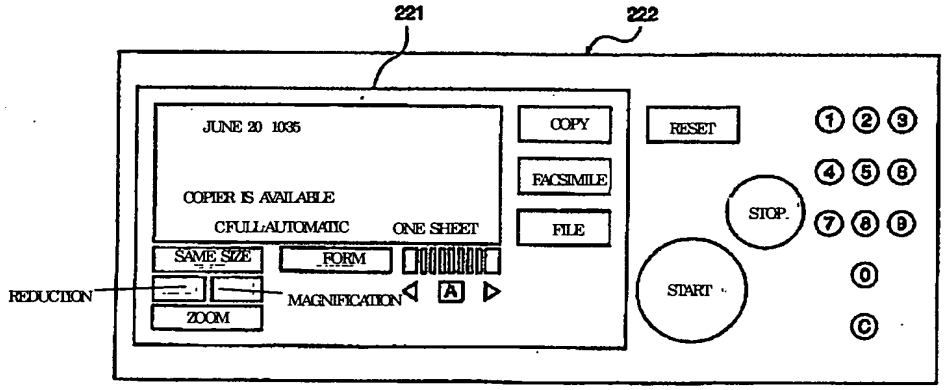


Fig. 3

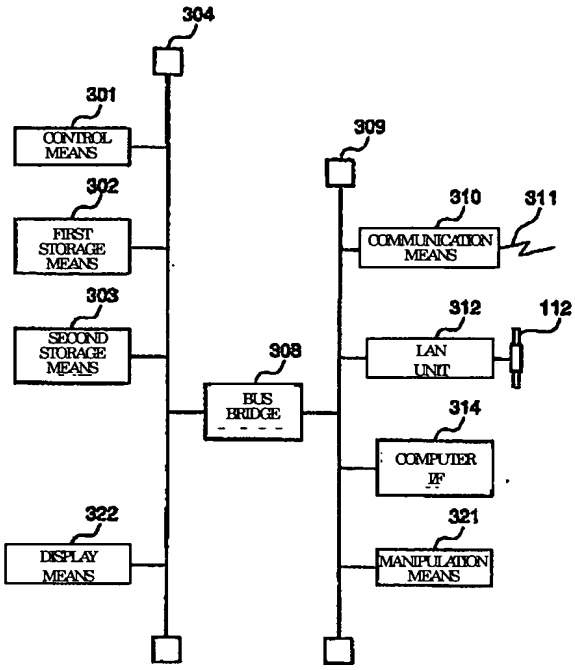


Fig. 4

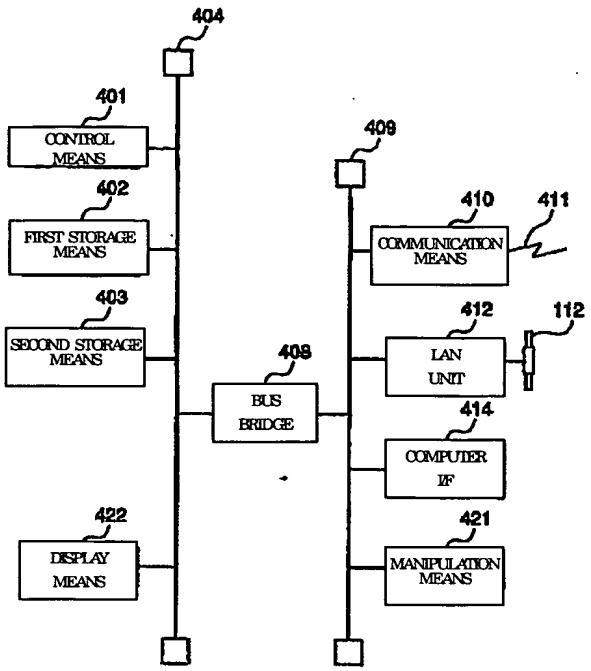


Fig. 5

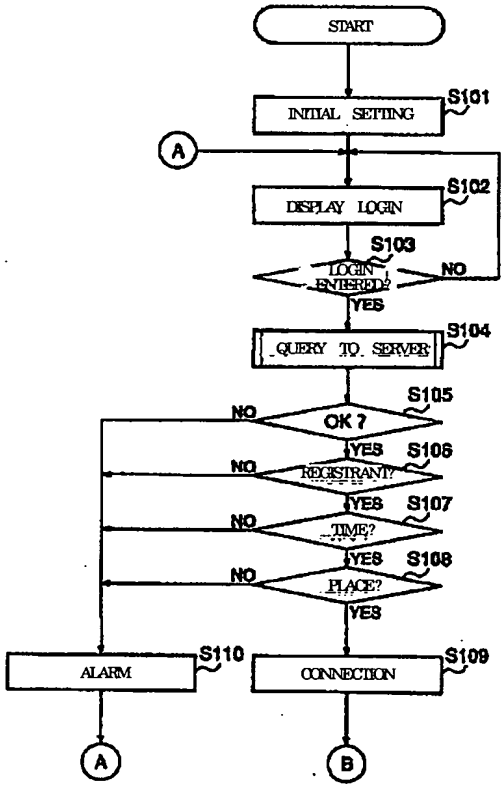


Fig. 6

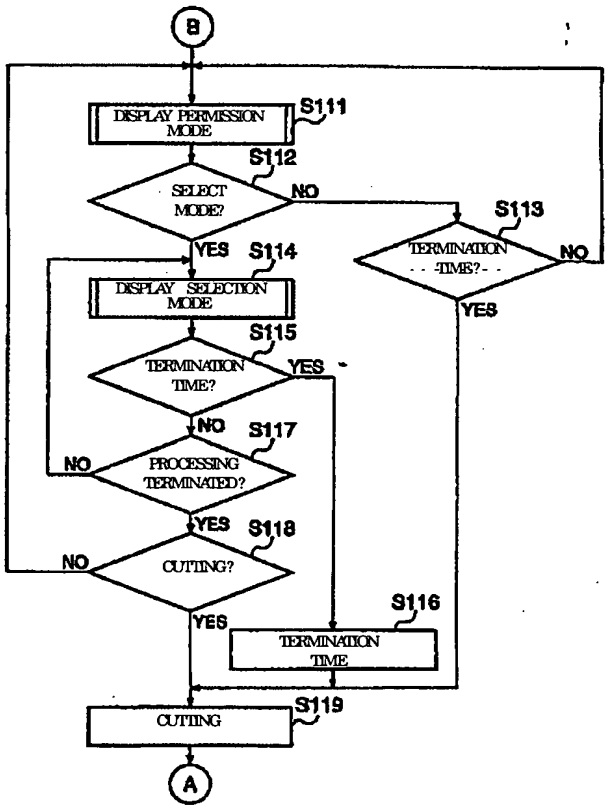


Fig. 7

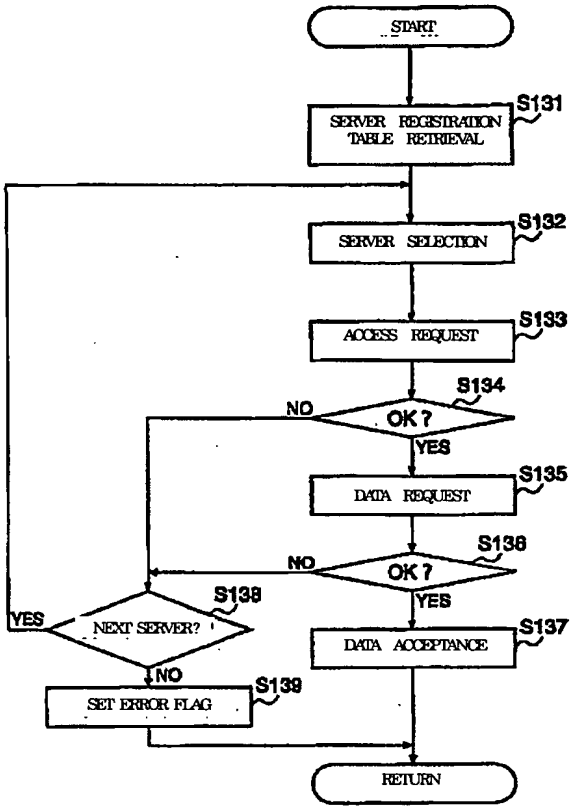


Fig. 9

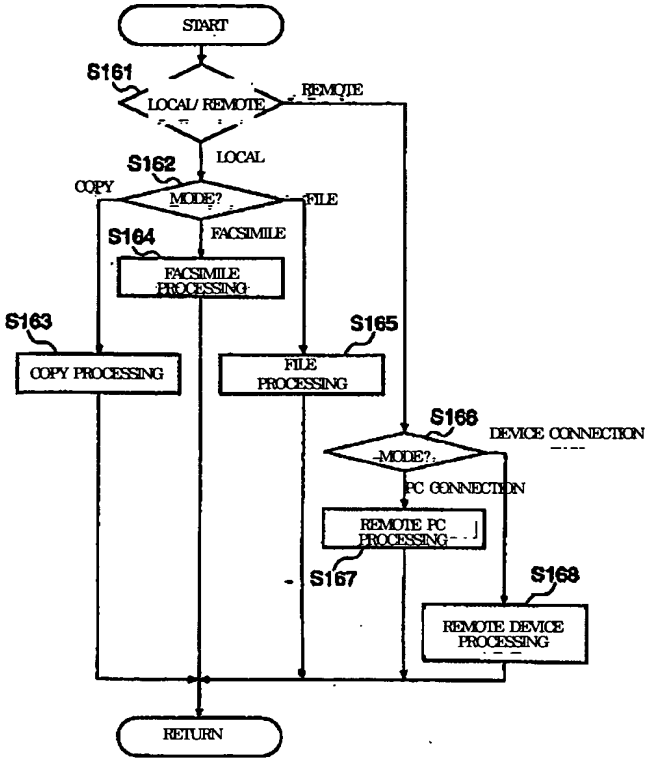


Fig. 13

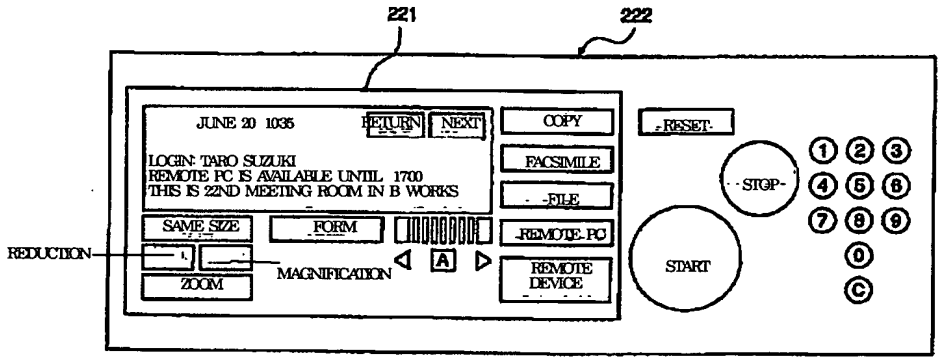


Fig. 8

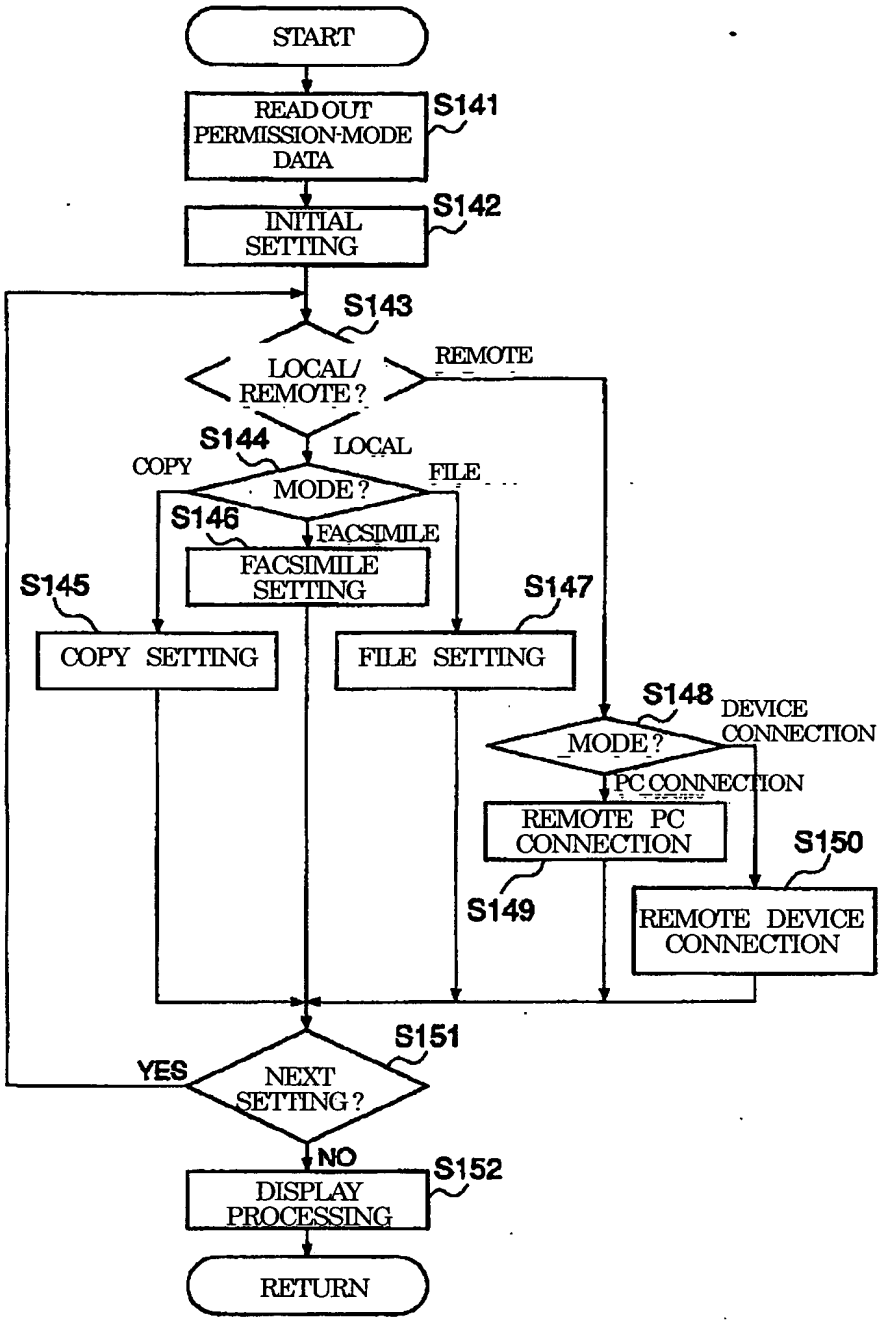

START
READ OUT PERMISSION-MODE DATA
S141
INITIAL SETTING
S142
S143
LOCAL/ REMOTE ?
REMOTE
LOCAL
S144
COPY
MODE ?
FILE
S146
FACSIMILE
FACSIMILE SETTING
S145
S147
COPY SETTING
FILE SETTING
S148
DEVICE CONNECTION
MODE ?
PC CONNECTION
REMOTE PC CONNECTION
S150
S149
REMOTE DEVICE CONNECTION
S151
YES
NEXT SETTING ?
NO
S152
DISPLAY PROCESSING
RETURN

Fig. 10

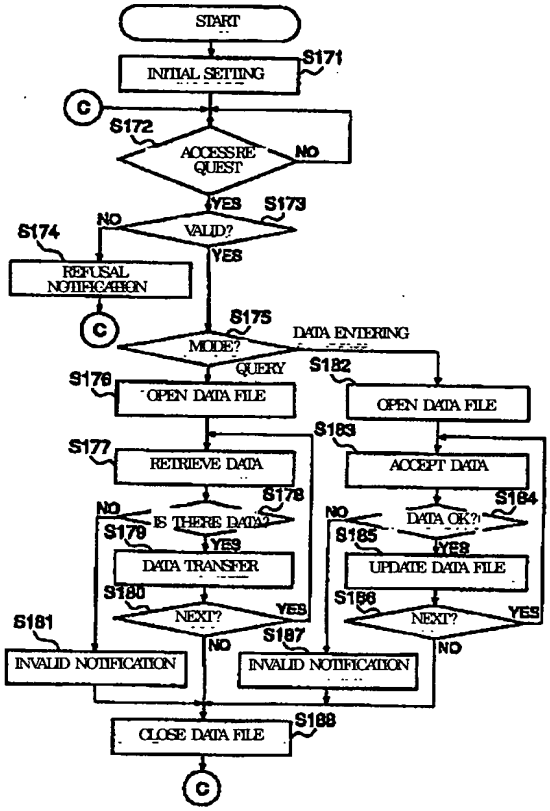


Fig. 11

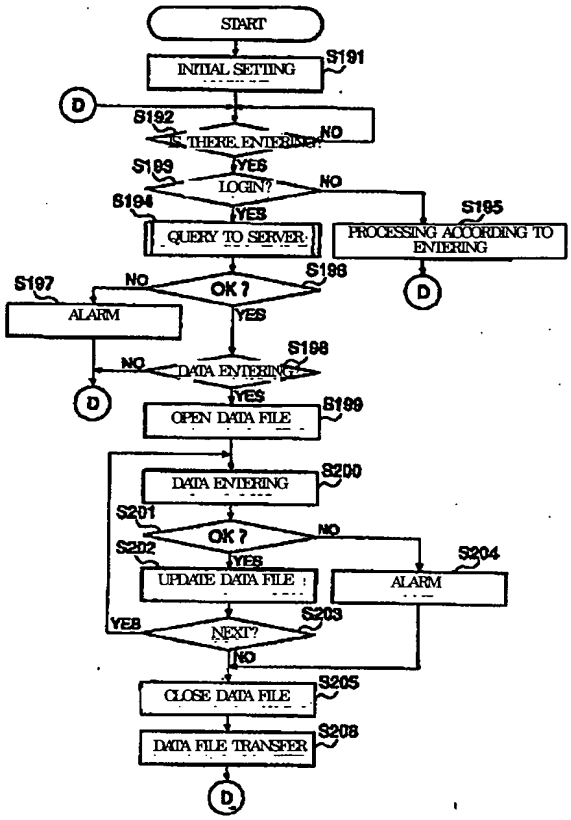


Fig. 14

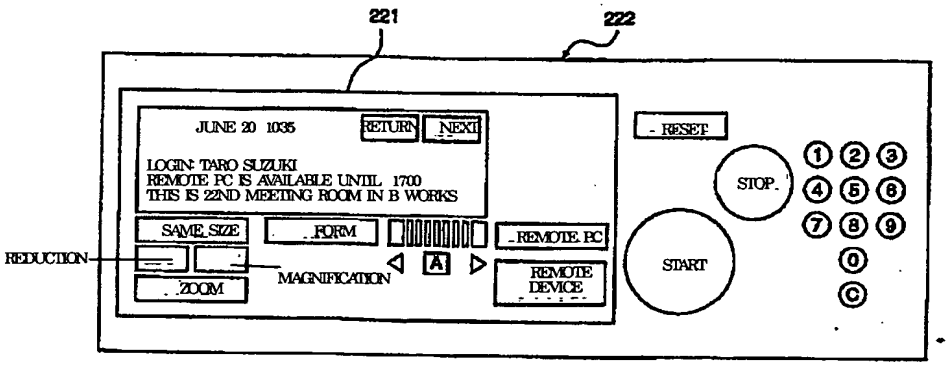


Fig. 15

NAME	PLACE	DATE	START TIME	TERMINATION TIME	STATUS
HANAKO TANAKA	A WORKS	APRIL 2, 1995	9:00	17:00	CONNECTING
SABURO TANAKA	B WORKS	APRIL 2, 1995	13:00	20:00	
SIRO SATO	C WORKS	APRIL 2, 1995	8:30	16:00	
•					
•					

Fig. 16

NAME	START DATE	START TIME	TERMINATION DATE	TERMINATION TIME	PLACE	CONNECTION MODE
TARO SUZUKI	APRIL 20, 1995	9:00	APRIL 20, 1995	12:00	A WORKS	LAN
TARO SUZUKI	APRIL 20, 1995	12:00	APRIL 20, 1995	13:00	ABSENT	CONNECTION MODE
TARO SUZUKI	APRIL 20, 1995	13:00	APRIL 20, 1995	17:00	B WORKS	WAN
TARO SUZUKI	APRIL 20, 1995	17:00	APRIL 20, 1995	9:00	HOME	PUBLIC LINE
TARO SUZUKI	APRIL 20, 1995	9:00	APRIL 20, 1995	20:00	A WORKS	LAN
•	•	•	•	•	•	•
•	•	•	•	•	•	•

Fig. 17

NAME	DATE	START TIME	TERMINATION TIME	PLACE	ROOM
TARO SUZUKI	APRIL 20, 1995	10:00	12:00	A WORKS	MEETING ROOM 101
TARO SUZUKI	APRIL 20, 1995	13:00	17:00	B WORKS	MEETING ROOM 22
•	•	•	•	•	•
•	•	•	•	•	•

Fig. 18

NAME	PLACE	COPY FUNCTION	FACSIMILE FUNCTION	FILE FUNCTION	PRINT FUNCTION	REMOTE PC FUNCTION	REMOTE DEVICE FUNCTION
TARO SUZUKI	A WORKS	1	1	1	1	1	1
TARO SUZUKI	B WORKS	0	0	0	0	1	1
TARO YAMADA	A WORKS	1	1	1	1	0	0
•							
•							

Fig. 19

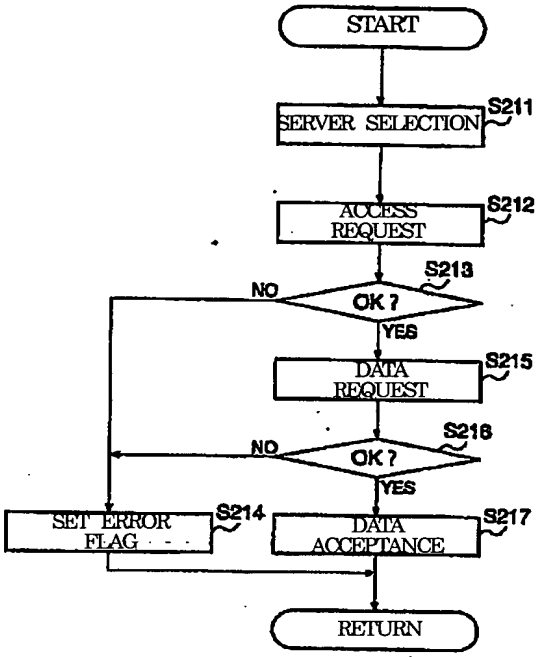


Fig. 25

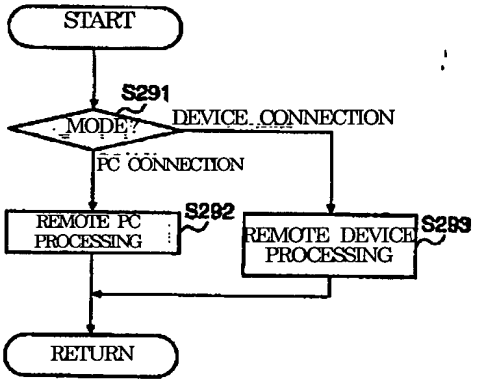


Fig. 20

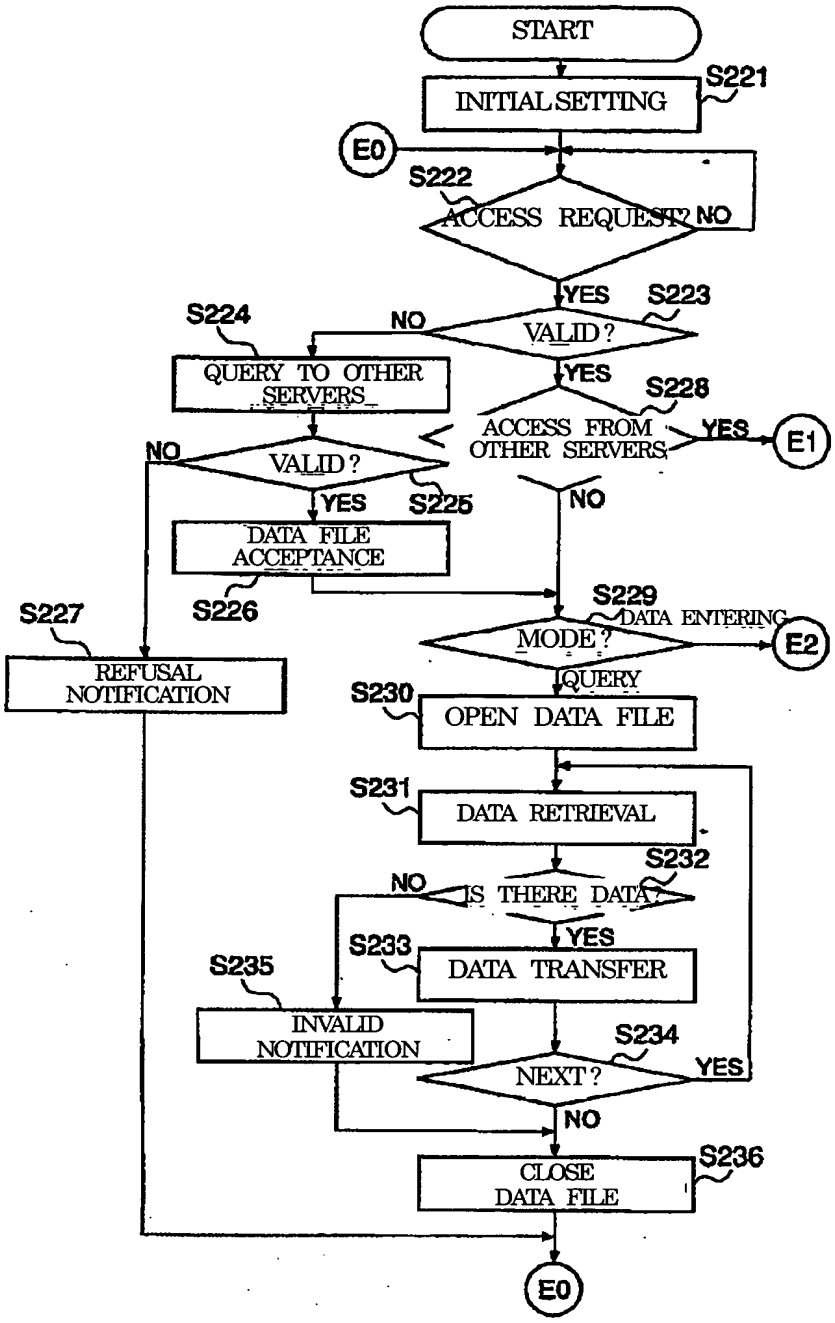

START
INITIAL SETTING
S221
E0
S222
ACCESS REQUEST?
NO
YES
S223
VALID?
NO
S224
QUERY TO OTHER SERVERS
YES
S228
ACCESS FROM OTHER SERVERS
YES
E1
NO
VALID?
NO
YES
S225
DATA FILE ACCEPTANCE
S226
S227
REFUSAL NOTIFICATION
S229
DATA ENTERING MODE?
E2
QUERY
S230
OPEN DATA FILE
S231
DATA RETRIEVAL
S232
NO
IS THERE DATA?
YES
S233
DATA TRANSFER
S235
INVALID NOTIFICATION
S234
NEXT?
YES
NO
S236
CLOSE DATA FILE
E0

Fig. 21

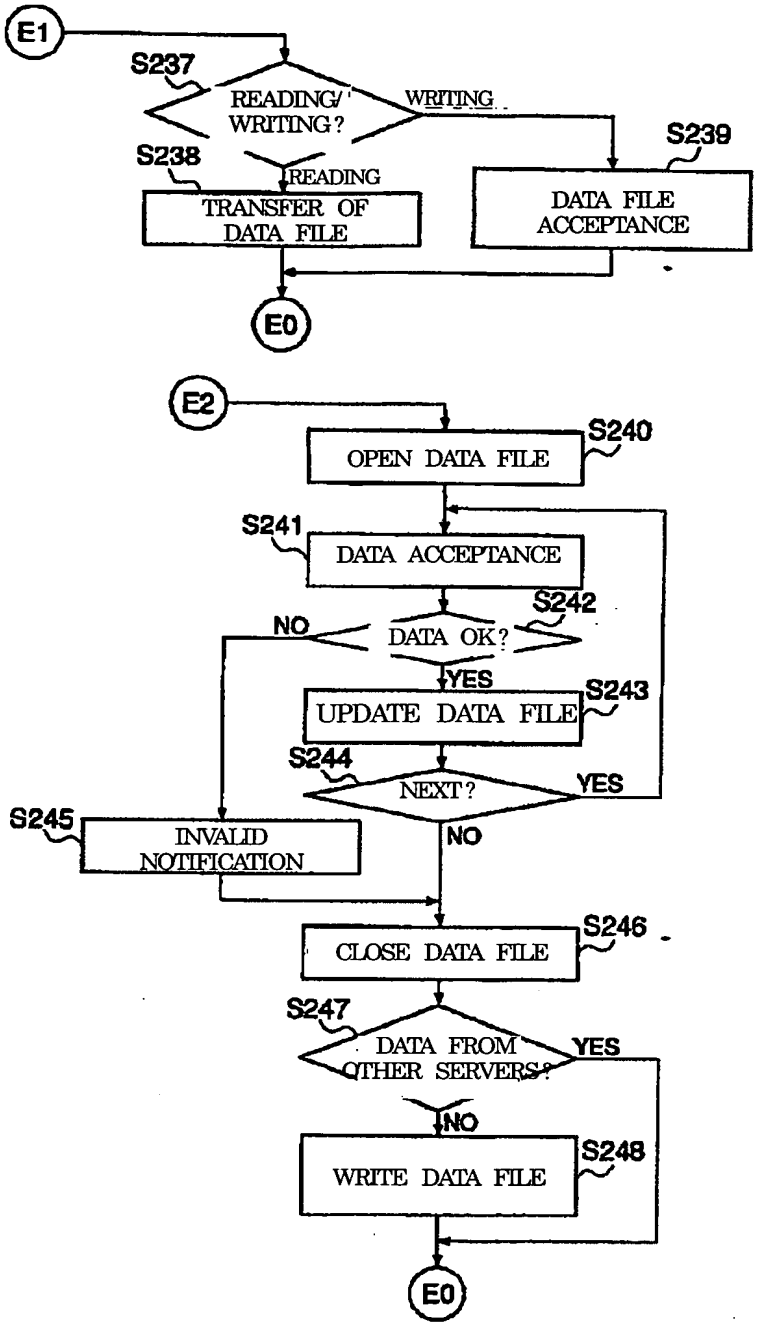

E1
S237
READING/ WRITING?
WRITING
S239
S238
READING
TRANSFER OF DATA FILE
DATA FILE ACCEPTANCE
E0
E2
S240
OPEN DATA FILE
S241
DATA ACCEPTANCE
S242
NO
DATA OK?
YES
S243
UPDATE DATA FILE
S244
NEXT?
YES
S245
INVALID NOTIFICATION
NO
S246
CLOSE DATA FILE
S247
DATA FROM OTHER SERVERS?
YES
NO
S248
WRITE DATA FILE
E0

Fig. 22

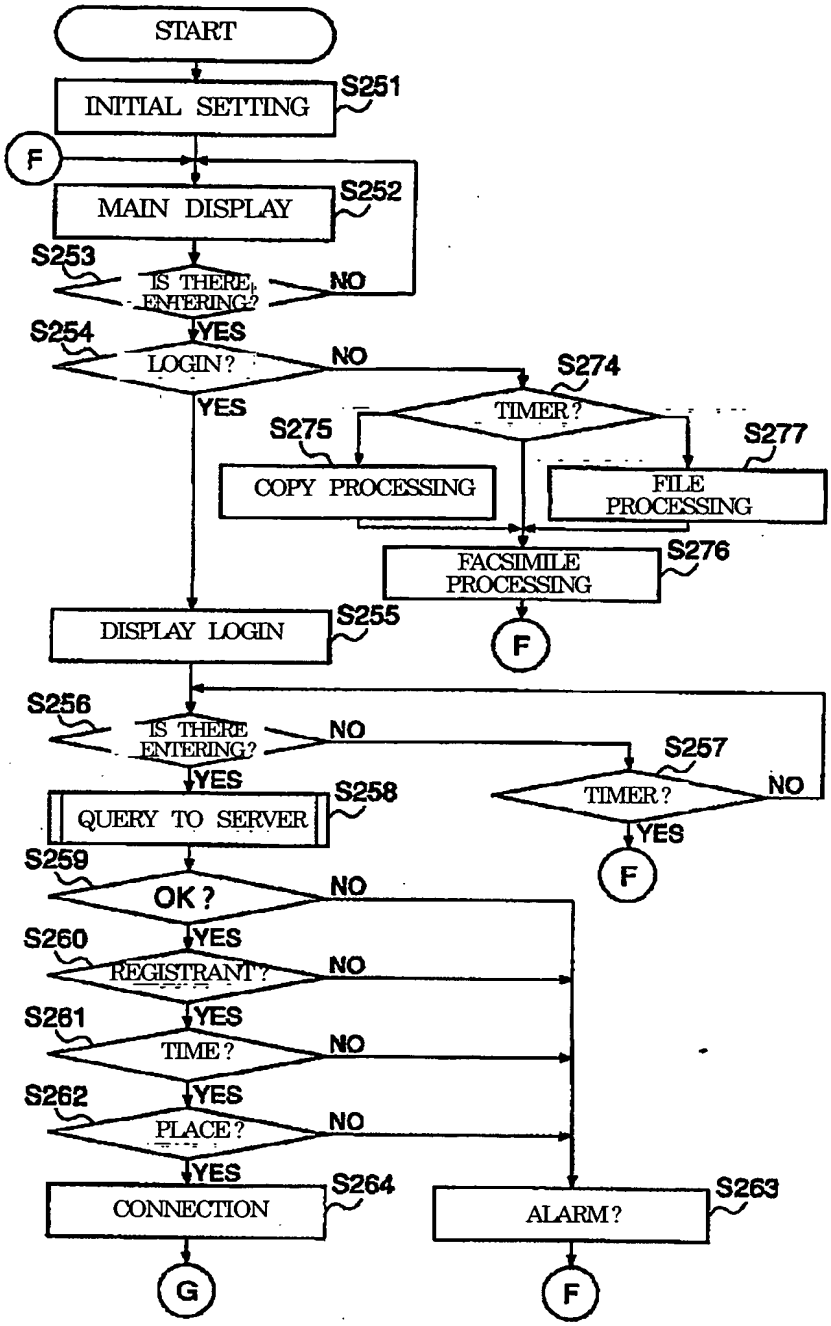

START
INITIAL SETTING
S251
F
MAIN DISPLAY
S252
S253
IS THERE ENTERING?
NO
YES
S254
LOGIN?
NO
YES
S274
TIMER?
S275
COPY PROCESSING
S277
FILE PROCESSING
FACSIMILE PROCESSING
S276
F
DISPLAY LOGIN
S255
S256
IS THERE ENTERING?
NO
YES
S257
TIMER?
NO
YES
F
S258
QUERY TO SERVER
S259
OK?
NO
YES
S260
REGISTRANT?
NO
YES
S261
TIME?
NO
YES
S262
PLACE?
NO
YES
S264
CONNECTION
G
S263
ALARM?
F

Fig. 23

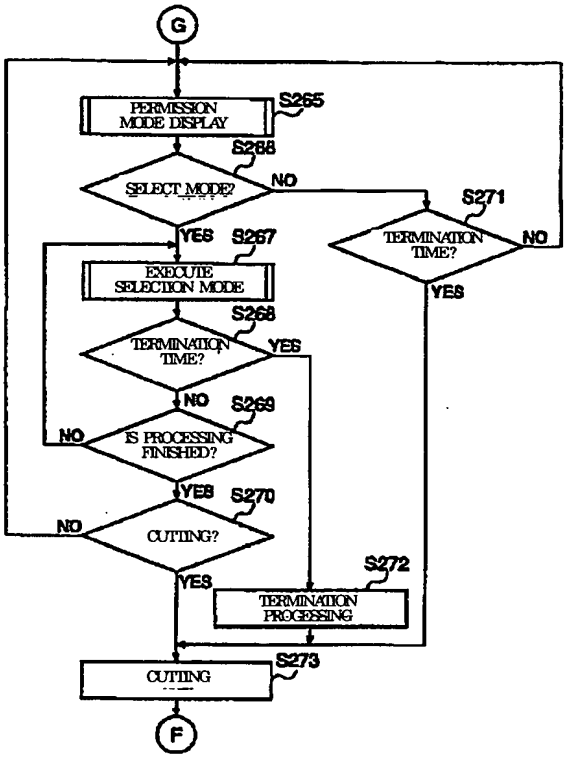
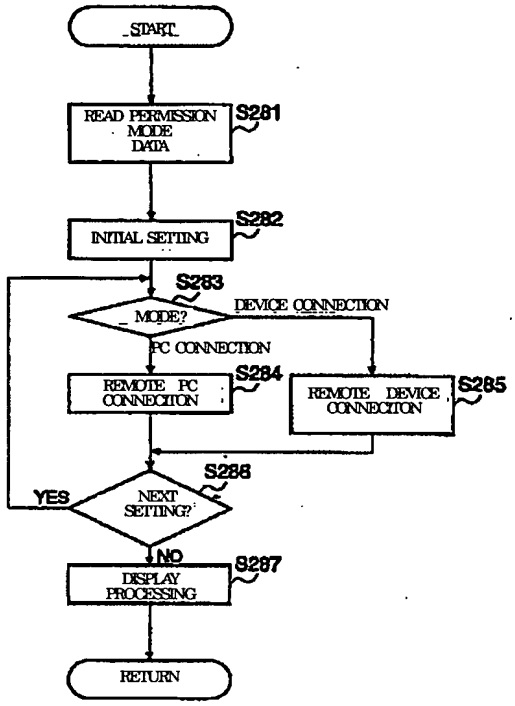

G
PERMISSION MODE DISPLAY
S265
S266
SELECT MODE?
NO
YES
S271
TERMINATION TIME?
NO
YES
S267
EXECUTE SELECTION MODE
S268
TERMINATION TIME?
YES
NO
S269
IS PROCESSING FINISHED?
NO
YES
S270
CUTING?
NO
YES
S272
TERMINATION PROCESSING
S273
CUTING
F

Fig. 24


START
READ PERMISSION MODE DATA
S281
INITIAL SETTING
S282
S283
MODE?
DEVICE CONNECTION
PC CONNECTION
REMOTE PC CONNECTION
S284
REMOTE DEVICE CONNECTION
S285
S286
NEXT SETTING?
YES
NO
DISPLAY PROCESSING
S287
RETURN